

THE  
**RAILWAY GAZETTE**

Price: Two Shillings

FRIDAY, MARCH 31, 1961

Annually £5 by post

## Modernisation in practice



Fifteen of these 3,000 h.p. 25 kV 50 cycle locomotives are being supplied to British Railways. Weighing 73 tons in working order, these locomotives are for use on the recently opened Manchester-Crewe electrified lines of

the London Midland Region.

'ENGLISH ELECTRIC' has equipped the 25 kV A.C. multiple unit stock in service on the Colchester-Clacton line of British Railways, Eastern Region.

# 'ENGLISH ELECTRIC'

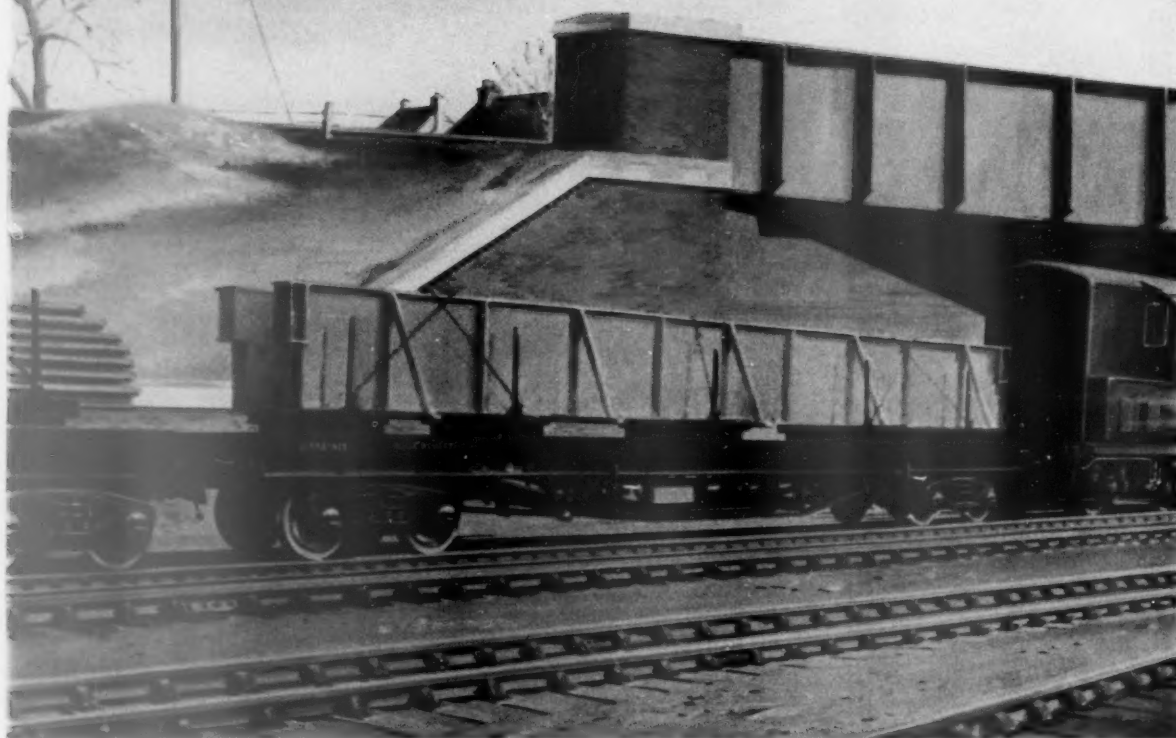
in association with VULCAN FOUNDRY • ROBERT STEPHENSON & HAWTHORNS

## *A smoother ride for heavy loads . . .*

200 of these new type 42 ton bogie bolster wagons have recently been built at Lancing and Swindon for British Railways—all are fitted with **SKF** spherical roller axleboxes. "Ride control" cast steel bogie side frames and bolsters were supplied by Davis & Lloyd (1955) Ltd., from the Sheffield works of their parent company, The English Steel Corporation. The long loads carried by these wagons need a particularly smooth ride, and by fitting the axles with **SKF** "rocker" boxes this requirement has been met.

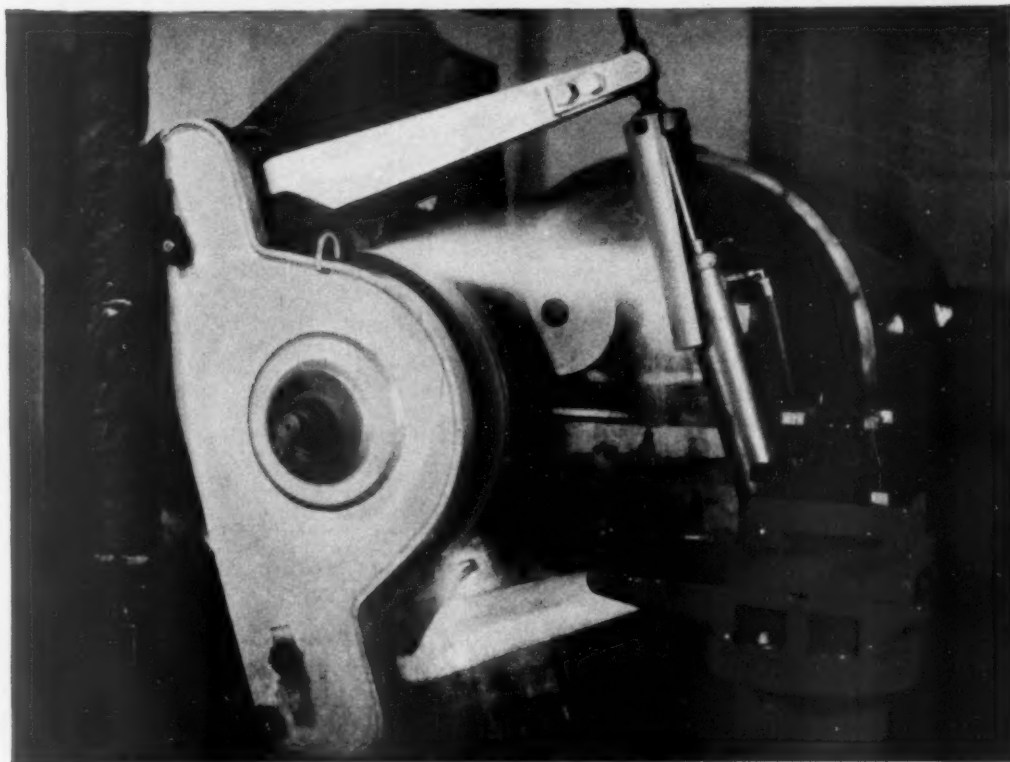
# SKF

SPHERICAL  
ROLLER BEARING  
AXLEBOXES



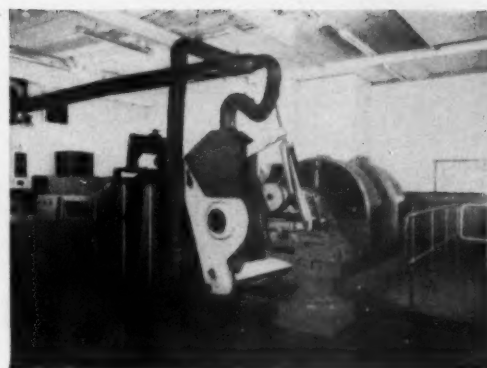
**THE SKEFKA BALL BEARING COMPANY LIMITED • LUTON • BEDS**  
OVER 1,750,000 **SKF** ROLLER BEARING AXLEBOXES HAVE NOW BEEN SUPPLIED TO THE RAILWAYS OF THE WORLD

# RAILWAY MATERIALS—wherever there are railways



Under modern operating conditions railway wheels have to withstand high temperatures, heavy loading and high levels of stress. The wheel testing machine illustrated is used to determine the best qualities of steel for wheels which have to withstand these conditions.

*The colour picture illustrates a wheel testing machine braking a solid wheel from high speed.*





Crack! But the kernel is safe! Such is the hair-like precision that Westinghouse Air Control Equipment gives the driver of the modern Diesel. Light, smooth, and always reliable Westinghouse Air Control Equipment gives you 100% control over engine throttle and transmission at all times. It makes high speeds less tiring and keeps the driver fresh to the end of the run. It is easy and economical to maintain and gives years of dependable service.



## **AIR CONTROL EQUIPMENT**

*For Smoothness... Precision... and Dependability*

WESTINGHOUSE BRAKE AND SIGNAL COMPANY LTD  
(Automotive and Industrial Products Division)

HANHAM ROAD · KINGSWOOD · BRISTOL · TELEPHONE: BRISTOL 67-1781





# HUNSLET LOCOMOTIVES *serve the world*

Hunslet locomotives have a reputation for absolute reliability. That is why you will find them all over the world, in all climates, on every class and gauge of railway.

Wherever they are, above or below ground, on plantation or docks, on contracting work, or main line haulage, Hunslet Locomotives have remained in the lead for quality for nearly 100 years.



21 H.P. Tiger Tim 270 H.P. 0-6-0 Type 637 H.P. 0-8-0 Type  
mines type diesel diesel hydraulic diesel hydraulic  
hydraulic locomotive locomotive locomotive

## THE HUNSLET ENGINE CO. LTD. LEEDS 10

London Office: Locomotive House, Buckingham Gate, S.W.1.

Associated Companies:

Hunslet Taylor Consolidated (Pty) Ltd., P.O. Box 57, Cleveland, Transvaal.  
Hunslet Engineering Central Africa (Pvt) Ltd., P.O. Box 2581, Salisbury,  
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Agents in many parts of the world

SIDING FLOODLIGHTING

COMPLETE MAINLINE  
ELECTRIFICATION

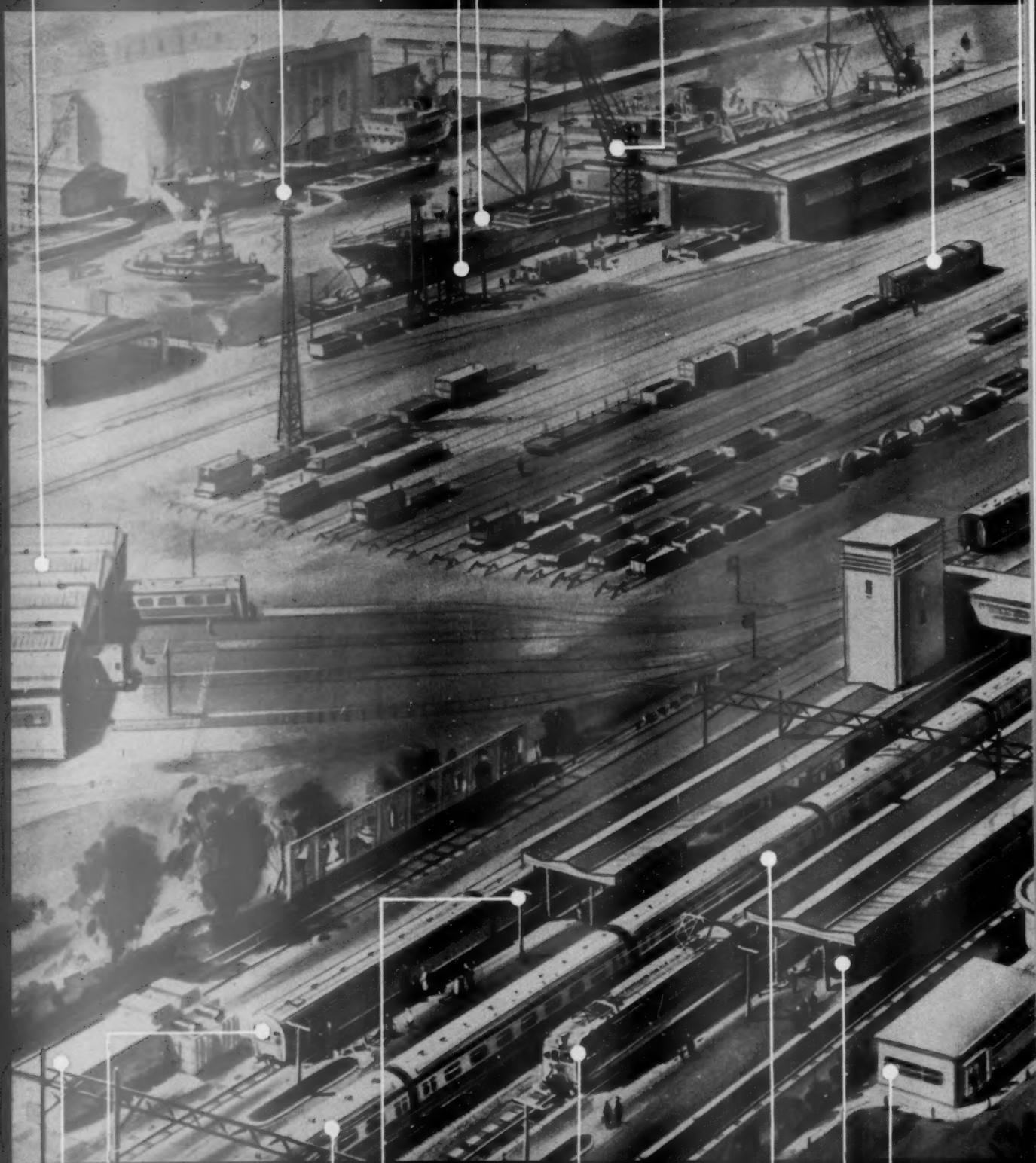
DOCK ELECTRICAL  
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DIESEL-ELECTRIC SHUNTERS

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WAGGON TIPLERS

FREIGHT AND PASSENGER  
DIESEL ELECTRIC LOCOMOTIVES



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LOCO SHED LIGHTING  
& VENTILATION

*The Railway Gazette* March 31, 1961

# the picture tells the story

G.E.C. designs,  
manufactures and installs  
equipment for the  
complete electrification  
of railway systems.

**RELY ON THE  
EXPERIENCE OF**

**G.E.C.**

THE GENERAL ELECTRIC CO LTD  
OF ENGLAND  
TRACTION DIVISION,  
BIRMINGHAM 6

NEON SIGNS

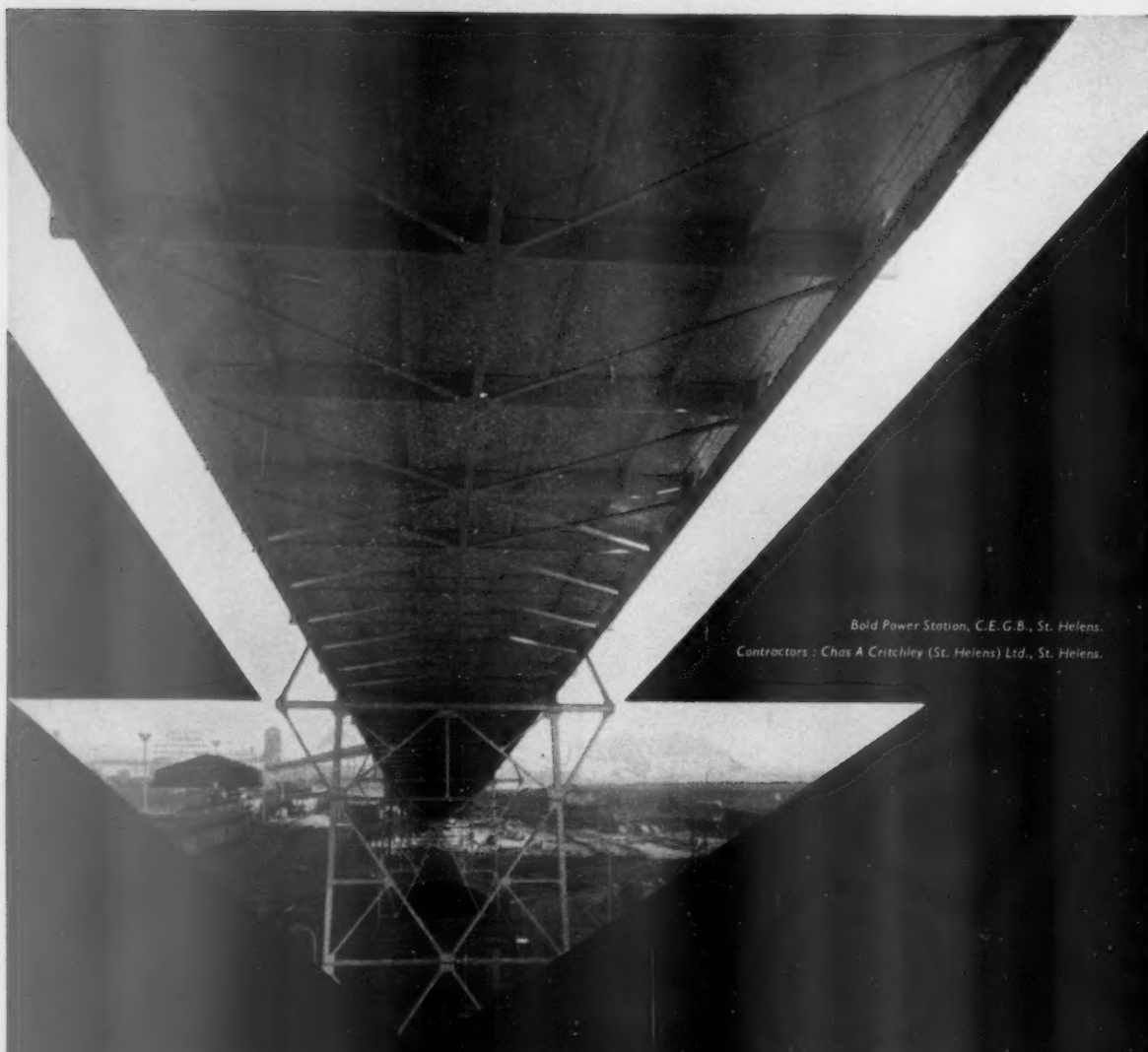
STATION INTERIOR  
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ILLUMINATED SIGNS

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Bold Power Station, C.E.G.B., St. Helens.  
Contractors: Chas A Critchley (St. Helens) Ltd., St. Helens.

## Prevent CORROSION

Zinc Chromate Primer and Epilux 1 . . . two outstanding anti-corrosive coatings  
widely used throughout industry, protect steelwork at Bold Power Station

**ZINC CHROMATE PRIMER:** A water-resisting medium, ensures maximum defence against corrosion on non-ferrous metals. Cheaper than red lead, it spreads further and more easily, dries faster and harder; good storage life, easy to mix. In yellow, green and red.

**EPILUX 1:** This air/drying enamel is based upon Epoxy resins. It possesses remarkable flexibility and abrasion resistance. In addition Epilux 1 has shown exceptional ability to withstand the attack of alkalis and mild acids . . . good resistance to water, excellent adhesion. Superior to traditional gloss paints in heavily chemical laden atmospheres

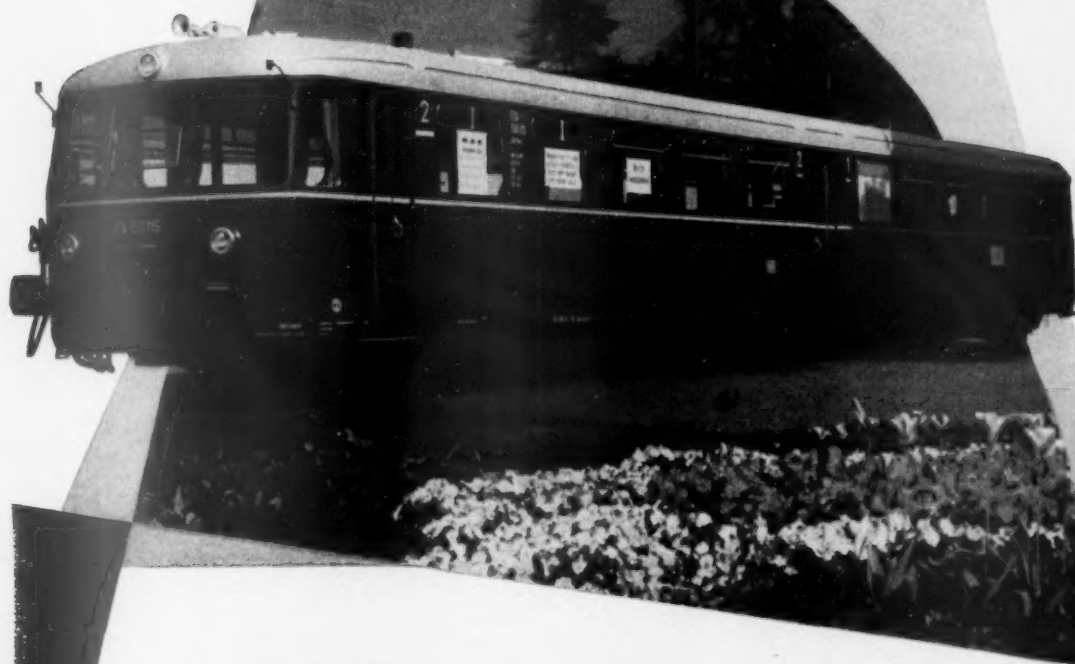
**ZINC CHROMATE PRIMER** ✱ **EPILUX 1**

**BRITISH PAINTS LIMITED** Industrial Maintenance Division

PORTLAND ROAD, NEWCASTLE UPON TYNE, 2. NORTHUMBERLAND HOUSE, 303-306, HIGH HOLBORN, LONDON, W.C.1. 31, WAPPING, LIVERPOOL, 1.  
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M·A·N



## BATTERY RAILCARS

for high economy on branch lines and local services.

Electric traction ensures absence of noise and vibrations, high starting acceleration.

Battery operation eliminates capital expenditure for overhead lines.

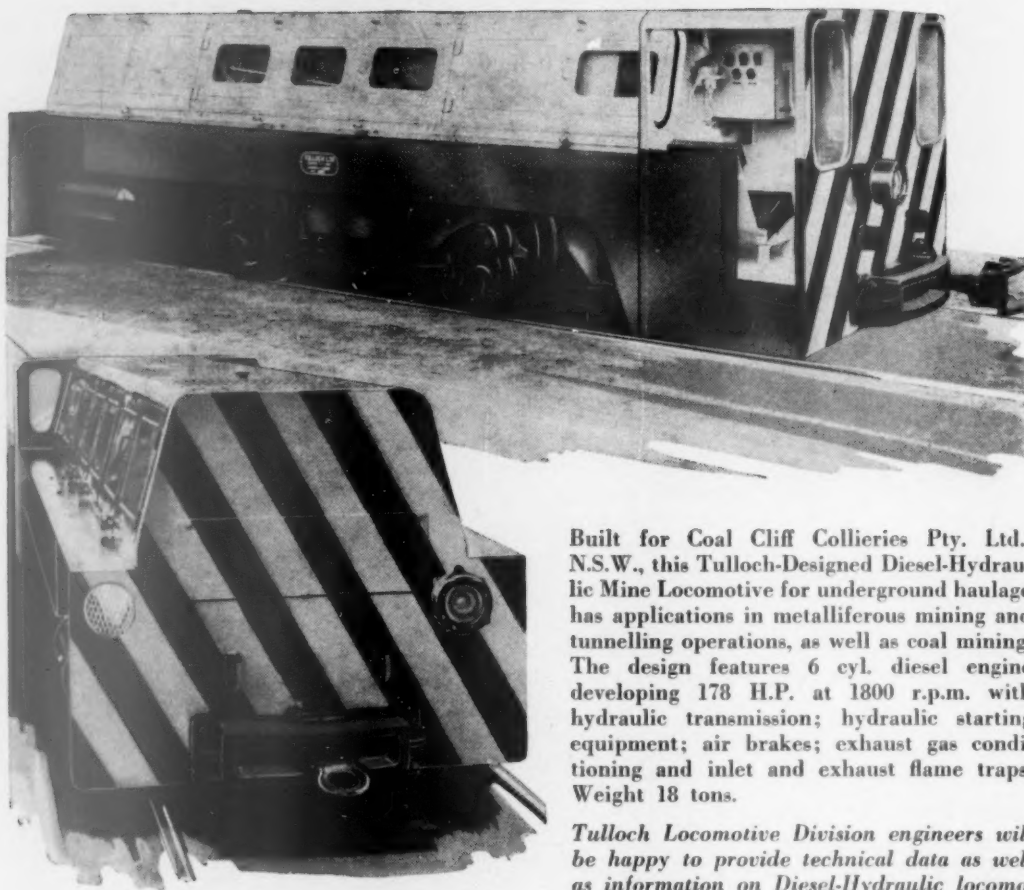
100 km.p.hr. maximum speed; daily range 250 to 350 km. depending on route schedule (500 km. if re-charged).

**MASCHINENFABRIK AUGSBURG-NÜRNBERG AG. NUREMBERG WORKS**

# **TULLOCH**

## **DIESEL-HYDRAULIC LOCOMOTIVE**

*for Underground Haulage*



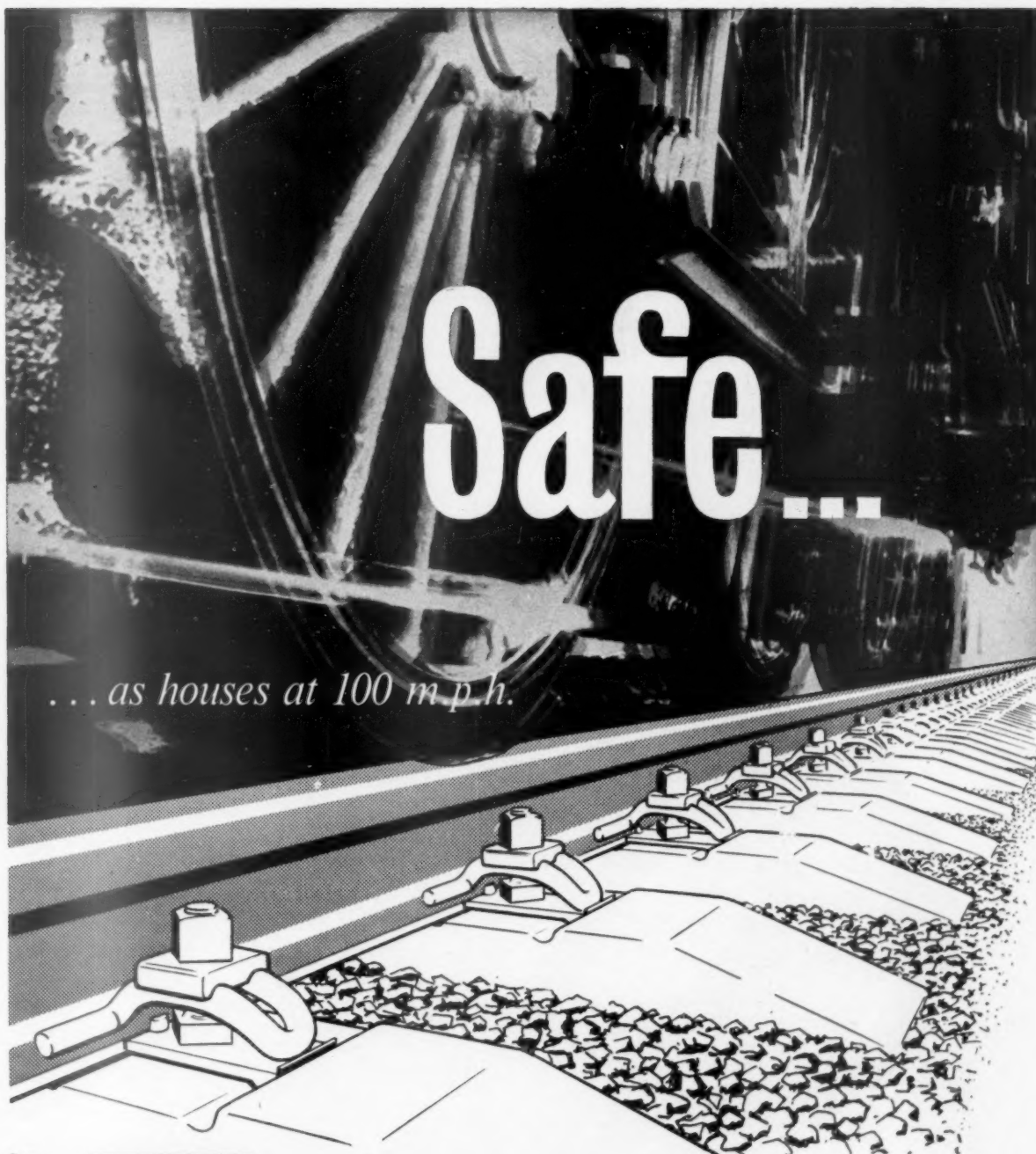
Built for Coal Cliff Collieries Pty. Ltd., N.S.W., this Tulloch-Designed Diesel-Hydraulic Mine Locomotive for underground haulage has applications in metalliferous mining and tunnelling operations, as well as coal mining. The design features 6 cyl. diesel engine developing 178 H.P. at 1800 r.p.m. with hydraulic transmission; hydraulic starting equipment; air brakes; exhaust gas conditioning and inlet and exhaust flame traps. Weight 18 tons.

*Tulloch Locomotive Division engineers will be happy to provide technical data as well as information on Diesel-Hydraulic locomotives for any particular service conditions.*

**TULLOCH**  
LOCOMOTIVE DIVISION *Limited*

CONCORD ROAD, RHODES  
SYDNEY, N.S.W., AUSTRALIA

DESIGNERS AND BUILDERS OF DIESEL LOCOMOTIVES



BJB Bar Type Resilient Rail Fastening—approved  
by the British Transport Commission for use  
with concrete sleepers and long welded rails.

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# **THE MILLS RAIL** PATENT **AND BASEPLATE**

Whenever a Mills Clip  
is fitted, it is fitted  
correctly.



Photograph by  
Courtesy of British Railways

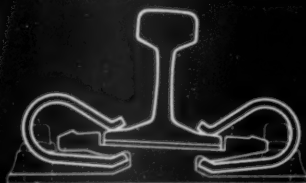


**EXORS OF JAMES MILLS LTD**  
**BREDBURY STEEL WORKS**



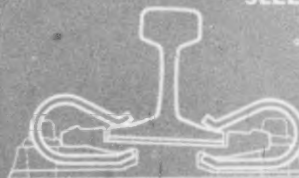
# CLIP

FOR WOOD SLEEPERS



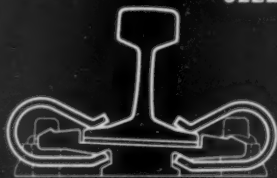
Four-hole baseplate  
with or without  
rubber rail pad.

FOR 'E' TYPE CONCRETE  
SLEEPERS



Two-hole baseplate,  
interchangeable with  
CSI Bullhead Chair.

FOR 'F' TYPE CONCRETE  
SLEEPERS



Small Area  
two-hole baseplate  
for main line use.

Every Mills Clip fitted applies  
a uniform load to the rail  
within a known range.

Very suitable for long welded  
rails and all heavy duty track

**WOODLEY • NEAR STOCKPORT**

Telephone: WOODley 2231 (7 lines) 3431 (7 lines) Cables: Mills Woodley



GENERAL MOTORS LOCOMOTIVE PARTS SERVICE  
ASSURES

**THE RIGHT PART  
AT THE RIGHT PLACE  
—ON TIME—**

## **GENERAL MOTORS OVER**

**DIVISION OF GENERAL MOTORS CORPORATION, NEW YORK 19,**

**ASSOCIATE BUILDERS:** AUSTRALIA—The Clyde Engineering Co. Pty., Ltd., Sydney, N. S. W. • BELGIUM—LaBrugeoise et Nivelles, St. Michel-lez-Bruges • GERMANY—Henschel-Werke, GmbH, Kassel • SOUTH AFRICA—Union Carriage & Wagon Co. (Pty.) Ltd., Nigel, Transvaal • SPAIN—Material y Construcciones, S. A., Barcelona • SWEDEN—Nydqvist & Holm Aktiebolag, Trollhattan



Lower maintenance costs . . . higher availability . . . PLUS LOWEST REPLACEMENT PARTS COSTS. These are proven benefits enjoyed by railways using General Motors Diesel locomotives.

The reason GM parts cost less is that they are produced in bigger volume—on the same lines as new locomotive units—by the most advanced manufacturing methods in the industry.

Next, because of standardization and wide parts interchangeability, General Motors locomotives require the smallest parts inventory. For example, one piston and cylinder assembly fits all "567" engines from six to 16 cylinders. Thus, the same investment in spares provides 25% to 50% greater protection.

Stores of volume-produced General Motors locomotive parts are available for immediate

shipment anywhere in the world—to reach you on time.

Ruggedly built to produce long mileage, GM locomotive parts weigh less than others—so shipping charges are lower. And all GM locomotive parts are scientifically packaged in strong yet lightweight stackable cartons for protection both in shipment and in storage. Extensive use of vapor phase inhibitor prevents rusting in transit or on shelves, and saves hours of degreasing when the part is needed.

Finally, replacement parts for General Motors locomotives incorporate latest design developments—continuous improvements are passed along automatically.

The real measure of a Diesel locomotive is its total cost over years of useful life—and experience of railways the world over proves General Motors locomotives cost less in the long run.

## SEAS OPERATIONS

.Y., U.S.A. CABLE ADDRESS: AUTOEXPORT

COMOTIVE PLANTS: Electro-Motive Division of General Motors, La Grange, Illinois, U.S.A.  
General Motors Diesel Limited, London, Ontario, Canada

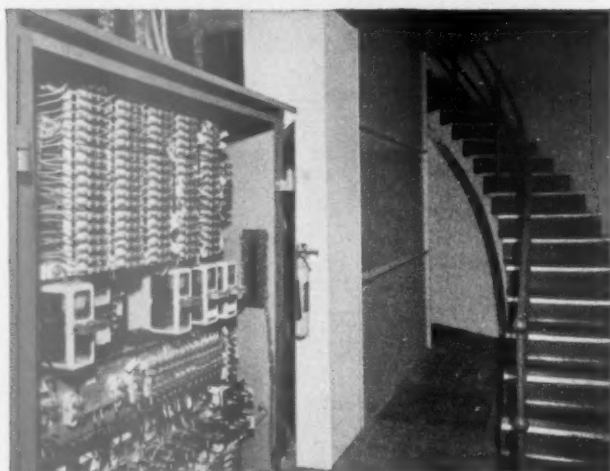
General Motors subsidiaries, branches or representation throughout the world

World's Highest Standard - 270 to 2600 H. P.





## KINGSFERRY BRIDGE-SWALE HALT



S.G.E. CONTROL EQUIPMENT IN BRIDGE MACHINERY ROOM

The new Kingsferry Bridge takes a single track railway, a dual carriageway and a footpath across the River Swale which separates the Isle of Sheppey from the mainland.

The trains running between Sittingbourne and Sheerness-on-Sea cross the Kingsferry Bridge at Swale Halt and all along the line protection is given by S.G.E. Signalling Equipment remotely controlled from Sittingbourne.

The Bridge cannot be lifted for ships to pass until the trap points are set and the signals proved at danger to both railway approaches; only then can the signalman at Sittingbourne give a release to the operator at the bridge to set his lifting machinery in motion.

This is just another interesting example of safe signalling provided by S.G.E.



S.G.E. SIGNALS LIMITED  
East Lane, Wembley

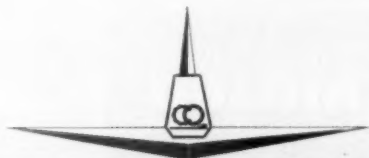




**the engine which suits every situation**  
**the engine which is given the most varied applications**



Semi-finished products for re-rolling and forging —  
 The whole range of flat products — Merchant bars  
 and sections — Wire-rods — All parts for rolling  
 stock — Track material — Special pig irons and steels  
 — High yield strength steels — Diesel engines from  
 200 to 25,000 hp — Line and shunting locomotives —  
 Complete steam power plant — Equipment for nuclear  
 power projects — Vessels of all types, motor or tur-  
 bine driven, etc...



It is indispensable wherever a cheap source of motive power and a machine with reduced floor-space are required.

The 175 C.O. type engine has been designed so as to combine the qualities of robustness, long life and low running costs of the slow-speed heavy engines with the advantages of light-weight, reduced floor-space occupied and low purchasing costs of the high-speed engines.

The 175 C.O. type engine, such as it is designed and built, shows all these advantages.

- square engine with light connecting rod system and moderate speed,
- crankshaft rotating in roller bearings with crankcase-tunnel: perfect rigidity of the assembly,
- overhead camshaft: accurate control of the valve movements,
- large-capacity water pump: even temperature in the cylinder blocks and cylinder heads,
- double oil sump and double oil pump: contact minimized between oil and combustion gas, longer life for the oil bath,
- high rigidity of the cylinders and high water pressure: no cavitation, no erosion,
- all auxiliaries are gear-driven: no chain, no belt,
- the filtering of fuel, oil and air is of the highest efficiency,
- the Ricardo Comet V pre-combustion chamber permits the use of low grade fuels.

Whichever is the problem you are faced with, a 175 C.O. type engine is the solution.

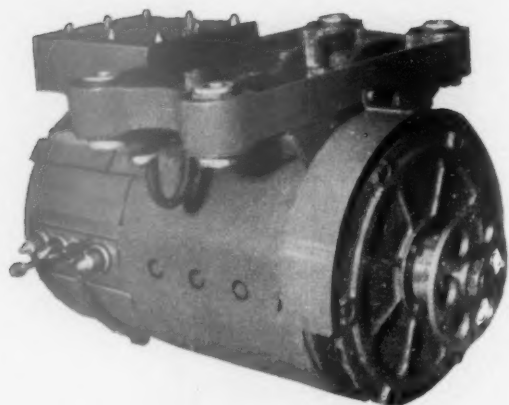
Apply to our Departments; their specialists will help you efficiently.

**SERAING COCKERILL-UGREE (Belgium)**

Representatives for United Kingdom and Commonwealth

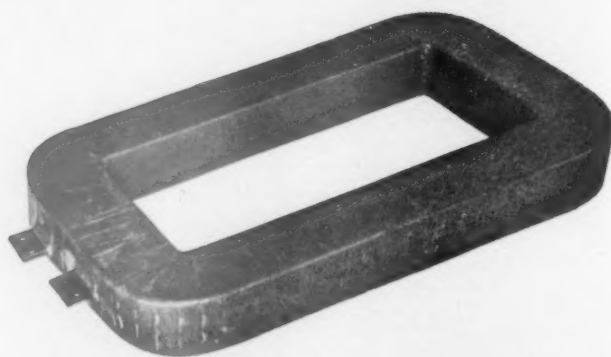
**DASHWOOD & PARTNERS Ltd.**  
 10, Lower Grosvenor Place,  
 London S.W.1

Telephone: Victoria 9907, 6861 and 4861  
 Telegrams: Dashwood-Phone-London  
 Cables: Dashwood-London



A traction motor has to withstand a combination of rough treatment—both electrical and mechanical—that no ordinary motor could be expected to endure. And it has to pack a lot more power into smaller dimensions. To the designer this is not just one problem but a collection of problems, to which solutions are found not all at once but one at a time, many of them perforce on the basis of experience accumulated over the years.

## This thing called know-how



Take this field coil from a C.P. traction motor. It looks more like a forging than a coil—and in a sense it is; a hard, precisely dimensioned, pressed square frame forming a coherent mass in which the conductors are buried and securely held; proof against dirt, water and vibration. This is the kind of know-how that comes of 80 years in the business.

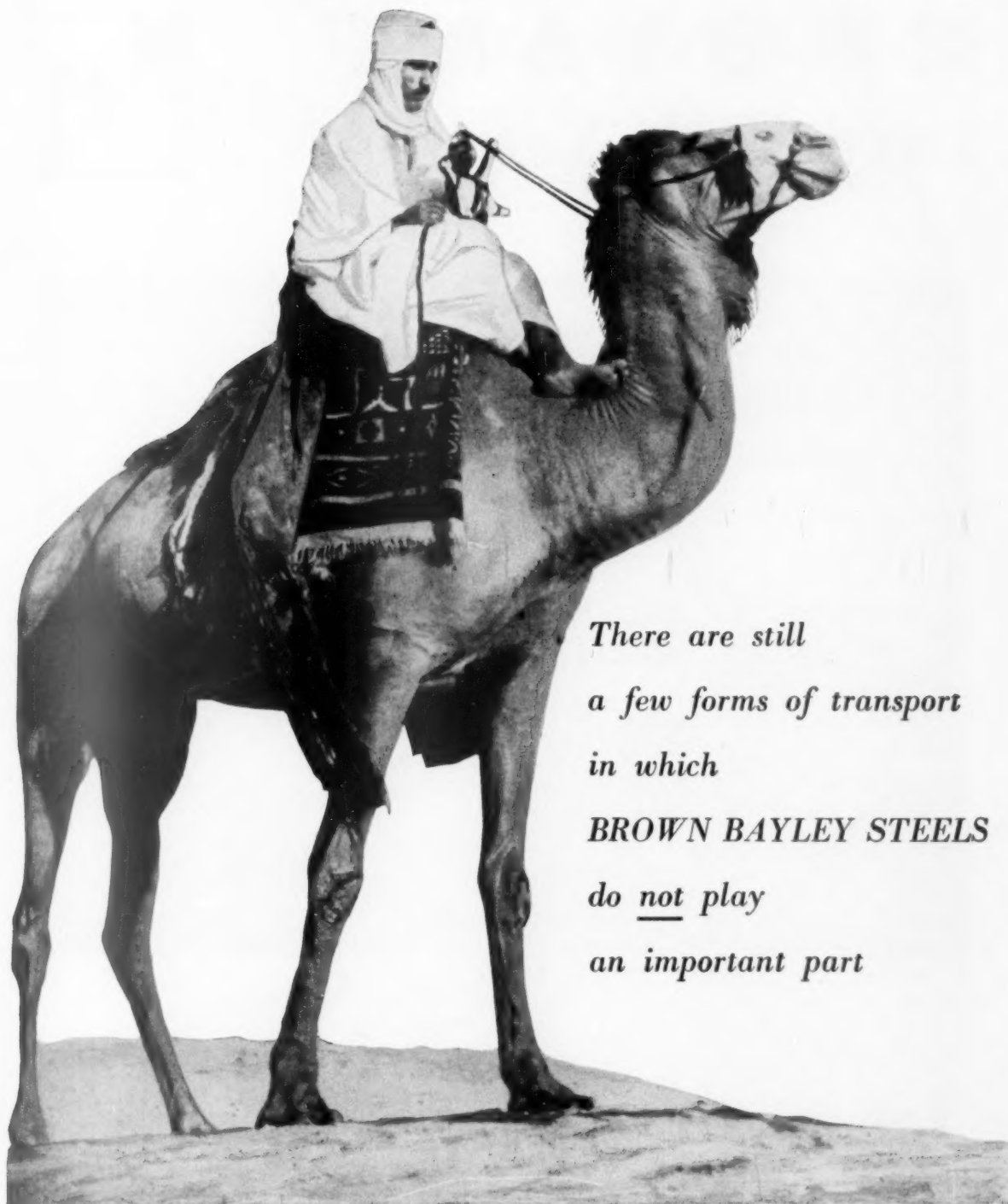
# Crompton Parkinson

LIMITED



Makers of Electric Motors of all kinds A.C. and D.C. Generators, Cables, Switchgear, B.E.T. Transformers, Instruments, Lamps, Lighting Equipment, Batteries, Stud Welding Equipment, Traction Equipment, Ceiling Fans.

TRACTION DEPARTMENT, CHELMSFORD, ESSEX Tel: Chelmsford 3161 'Grams & Cables: Crompark, Chelmsford TE611



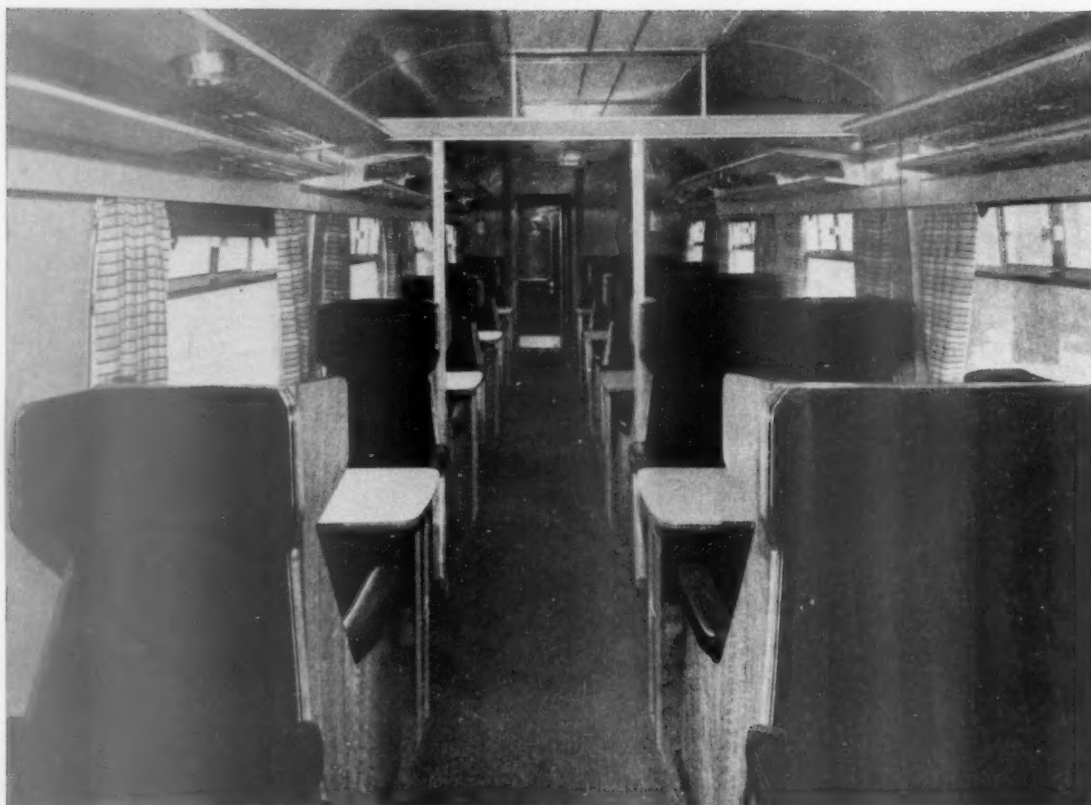
*There are still  
a few forms of transport  
in which  
**BROWN BAYLEY STEELS**  
do not play  
an important part*

**BROWN BAYLEY STEELS LIMITED • SHEFFIELD**



# **BUOYANT**

## **Lace Web Seating**



*(By kind permission of the Pullman Car Company Ltd., B.T.C.).*

**for maximum comfort**  
**THE LACE WEB**  
**SPRING CO. LTD.**

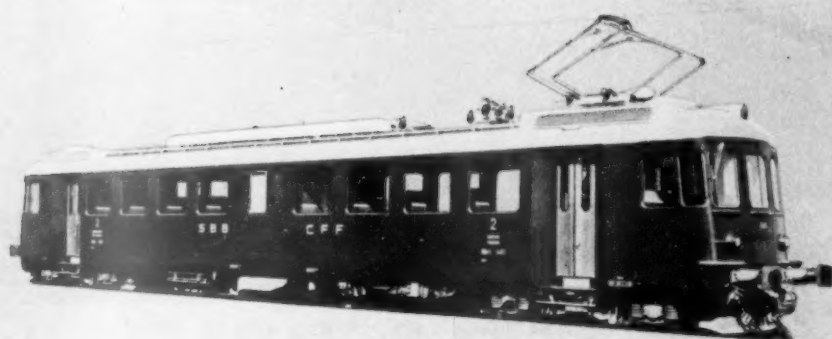
**SANDIACRE near NOTTINGHAM**

Phone: Sandiacre 2133-4-5

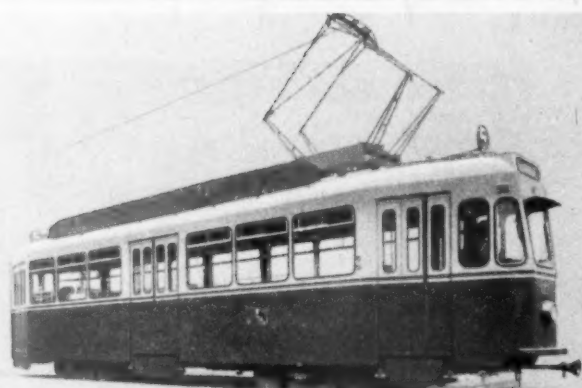
THIS ILLUSTRATION  
SHOWS BUOYANT  
LACE WEB SEATING  
IN PULLMAN CAR  
SECOND CLASS  
STOCK.  
MANUFACTURED  
FOR THE PULLMAN  
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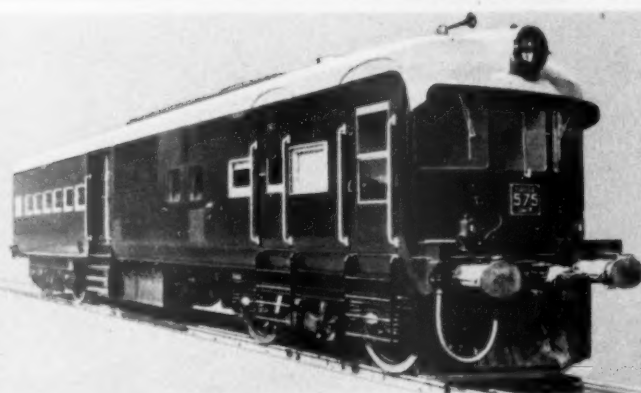
# Specialised Designers and Builders\* of light all-welded steel rolling stock



High-power electric motor coaches of 2800 HP of the Swiss Federal Railways. Seating capacity: 68. Tare weight: 65 t.



Motor coaches of the City Tramway, Berne, with a tare weight of 18 t and an output of 300 HP.



800 HP Diesel-hydraulic Power coaches with electric multiple-unit control for Ceylon Government Railway.



SWISS INDUSTRIAL COMPANY  
NEUHAUSEN RHINE FALLS

*Schlieren*

SWISS CAR AND ELEVATOR MANUFACTURING CORP., LTD.  
SCHLIEREN-ZÜRICH

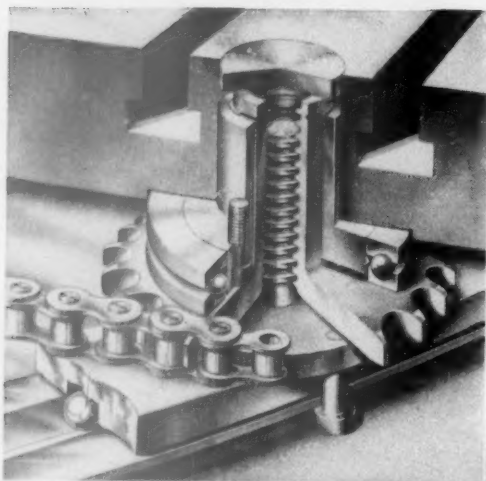


SCHINDLER CARRIAGE AND WAGON CO., LTD.  
PRATTELN

\*  
EXPORT ASSOCIATION  
OF SWISS ROLLING STOCK  
MANUFACTURERS

Now available for Kearns Horizontal Boring Machines

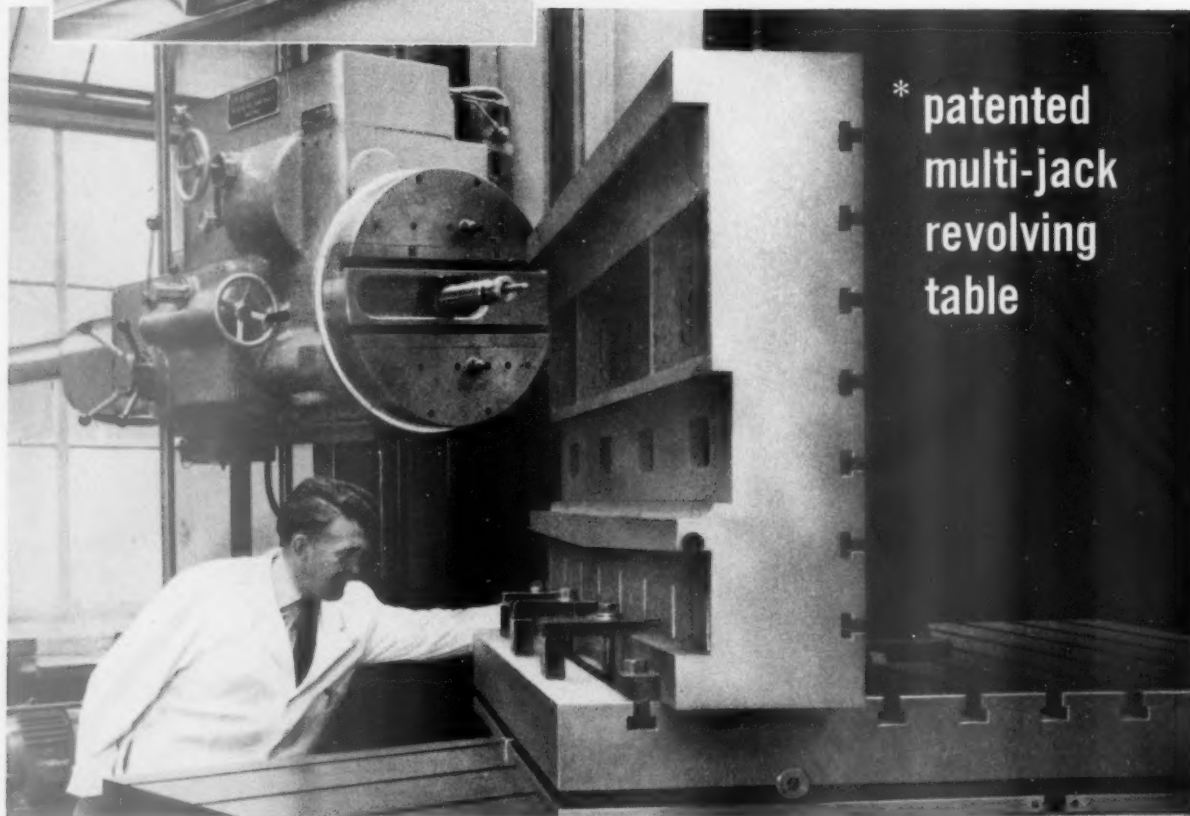
## an even lift for offset loads



A screw and nut arrangement draws a precision roller chain round several sprockets. Each sprocket forms part of a carefully placed jack lift which transmits the load to a large diameter ball track and lifts the revolving table clear of the main table.

- \* During cutting operations the revolving table is supported on and clamped directly to the main table.
- \* An even lift is ensured by a number of equal stroke "jacks".
- \* Several lifting points ensure good load distribution.
- \* Rotation under rolling friction on a large diameter ball track.

# KEARNS



\* patented  
multi-jack  
revolving  
table



\* Another KEARNS development for improved production efficiency

H. W. KEARNS & CO LIMITED, BROADHEATH near MANCHESTER



# portable welding equipment

*for continuous jointing  
of long welded rails*

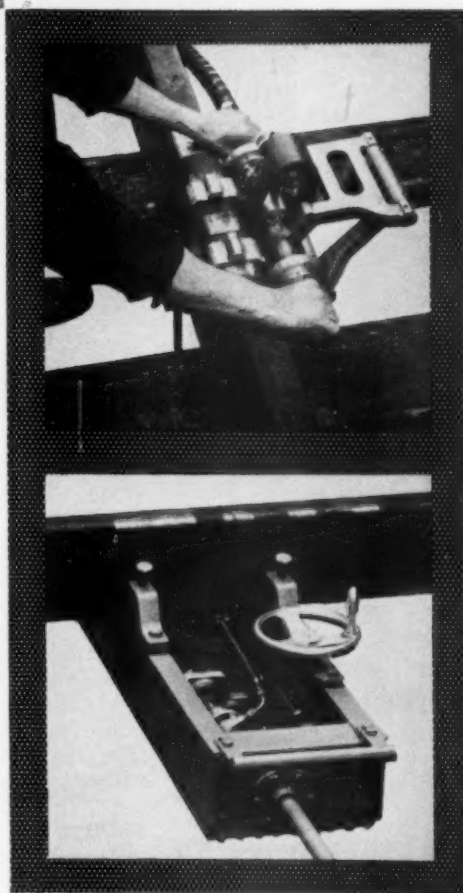
Developed for use with the systems originated by British Railways, this lightweight plant comprises a welding generator, a profile grinding machine and a vertical milling machine. It can therefore carry out the entire process of welding in situ, dressing, profile grinding and milling in an average time of 30 minutes per pair of rail joints for two operators.

The welding generator, driven by a governed 25 h.p. air-cooled engine, provides 300A continuous, with a maximum of 400A. Engines can be supplied for running on petrol or propane gas. The auxiliary generator gives 27.3A at 110V d.c. for operating auxiliary equipment. The complete assembly is mounted in a wheeled tubular frame with all controls, the total weight being about 965 lb.

A pair of tubular detachable handles is provided for manœuvring the unit on the site.

After the weld is made, excess metal is removed by a portable Flextol flexible shaft grinder. The Flextol Profile Grinder attachment is then clamped to the rail, and its flexible grinding belt gives a contour accurate within 0.005". The Vertical Milling Attachment then removes from the base of the rail the steel strip used to retain the weld metal.

Whilst primarily intended for jointing rails, the welding plant is equally suitable for other welding work where a high output is required from portable equipment.

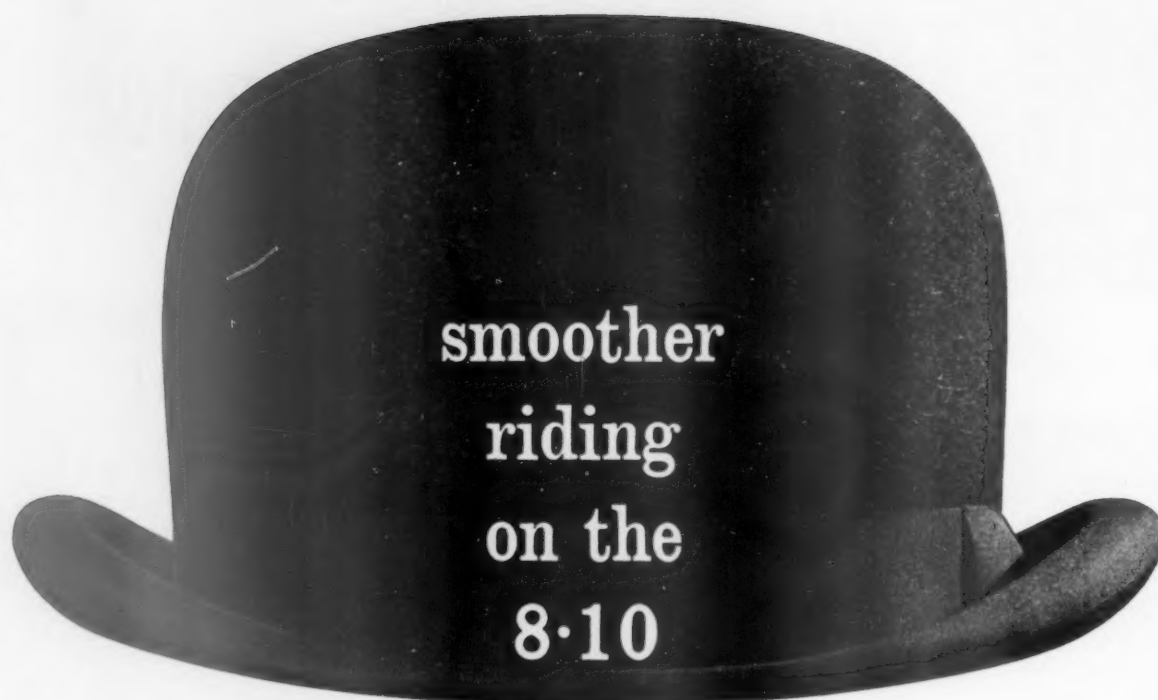


**Flextol**  
POWER TOOLS  
EALING, MIDDLESEX

Full particulars from

**FLEXTOL ENGINEERING COMPANY LTD**  
THE GREEN · EALING · LONDON · W5

Telephone: EALING 6444/7 Telegrams: DOMINATING, EALUX, LONDON

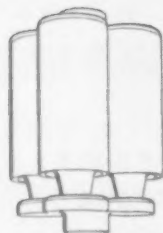


with **BTR** VIBRO-INSULATORS

Not a tremor, not a jolt for this bowler hat—or for its owner. He now gets the sort of smooth ride that always makes travelling more pleasurable. Designed to utilise the greatly superior vibration absorption qualities of *rubber-in-shear* as opposed to rubber-under-compression, BTR Vibro-Insulators provide the railway engineer with a simple, permanent and economical means of improved riding without major alterations in bogie design.

Consult the BTR Technical Advisory Service first.

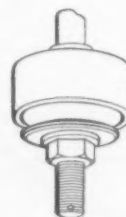
*For Auxiliary Bearing Springs, Bolster Springs, Axlebox Springs, Mountings for Diesel Generator Units, Exhausters and Air-Brake Equipment.*



BTR Heavy Load/High Deflection Bolster Spring

**BTR Industries Ltd**

HERGA HOUSE, VINCENT SQUARE, LONDON S.W.1



BTR Auxiliary Bearing Spring



# DREWRY RAIL CARS

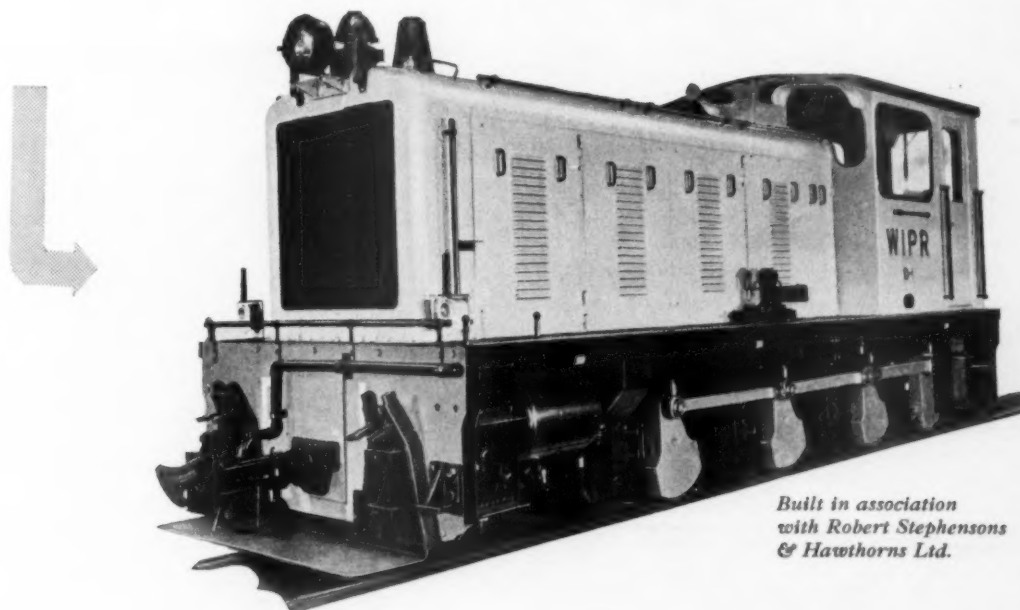


*Built in association with  
The Birmingham Railway Carriage  
& Wagon Co. Ltd.*

## WITH MECHANICAL OR HYDRO-MECHANICAL TRANSMISSION

The upper illustration shows one of two Twin Car Units shipped this year to the Nigerian Railway Corporation, equipped with twin underfloor engines totalling 400 h.p. and multiple-speed epicyclic transmission with automatic control. The lower illustration is one of a number of 30-ton metre gauge Drewry locomotives recently shipped to Portuguese India, for freight and passenger duties.

## AND LOCOMOTIVES

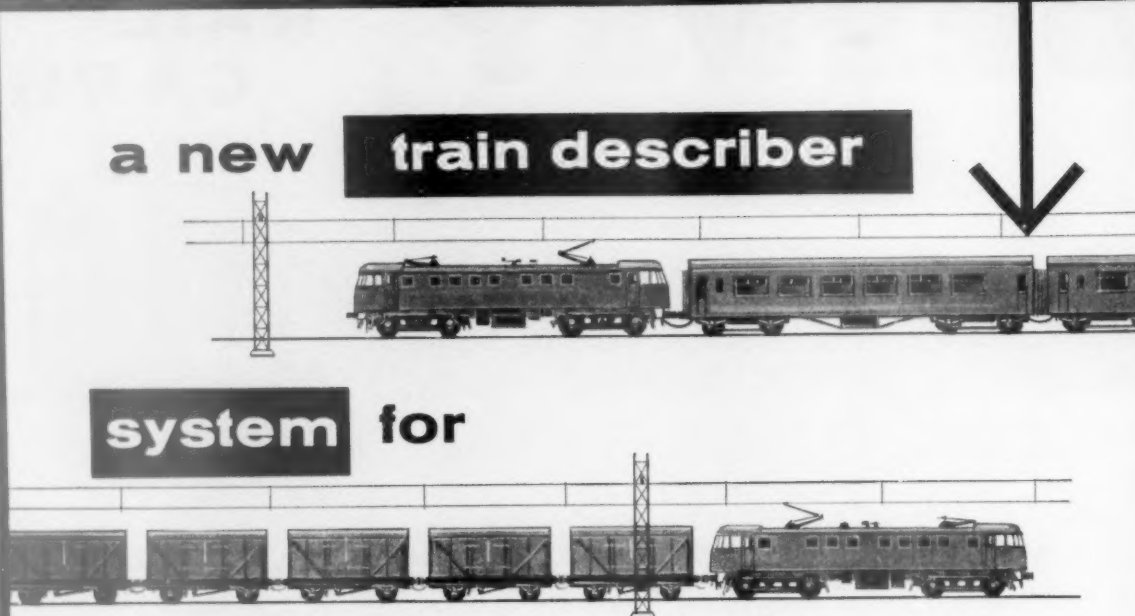


*Built in association  
with Robert Stephenson  
& Hawthorns Ltd.*

**THE DREWRY CAR COMPANY LTD.**

CITY WALL HOUSE, FINSBURY PAVEMENT, LONDON, E.C.2  
TEL: MONARCH 0671      GRAMS.: INNEAL, PHONE, LONDON

a new **train describer**



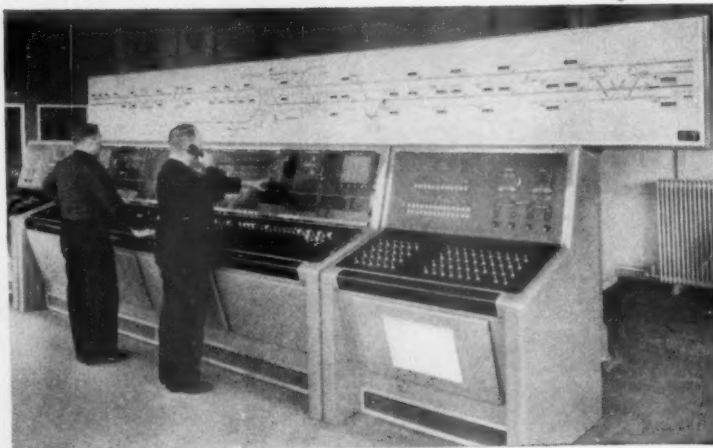
**system** for

**British Railways**

Designed and manufactured by STC as part of the electrification and resignalling of the British Railways London Midland region, this new Train Describer System has been installed to cover the busy route between Crewe and Manchester.

The outstanding feature of the system is the incorporation of the Train Describer into the track diagram thus providing an at-a-glance record of both the train description and train movements.

Descriptions are automatically transferred to successive Signal Berth Indicators in the track diagram by means of track circuits and when a signal box relinquishes control the description is automatically transmitted to the track diagram in the next box.



#### PRINCIPAL FEATURES OF THIS NEW

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- |  |   |
|--|---|
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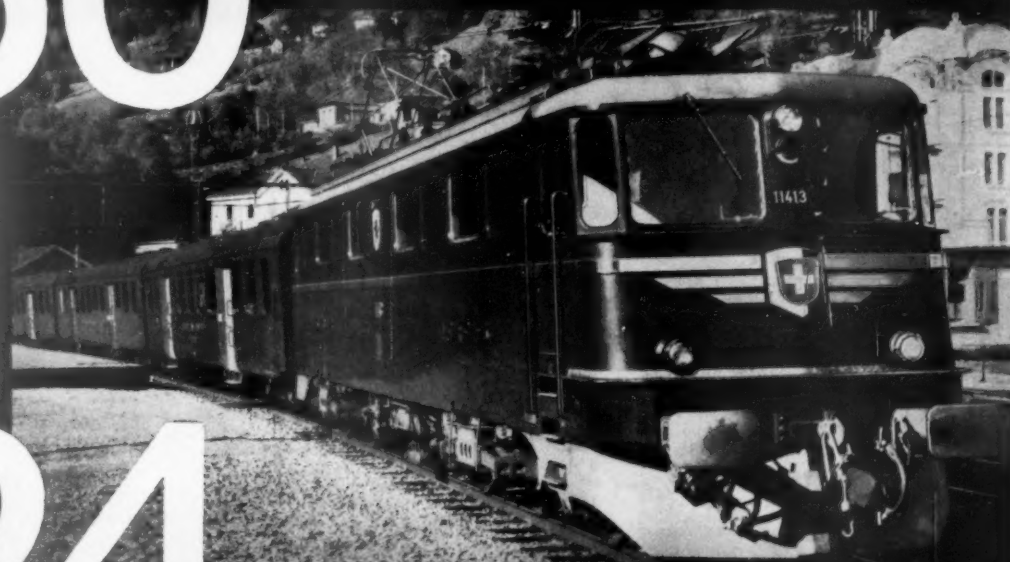
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# 50

of these 6000 HP Co-Co type locomotives are giving excellent service on the Gothard and the Simplon lines of the Swiss Federal Railways.

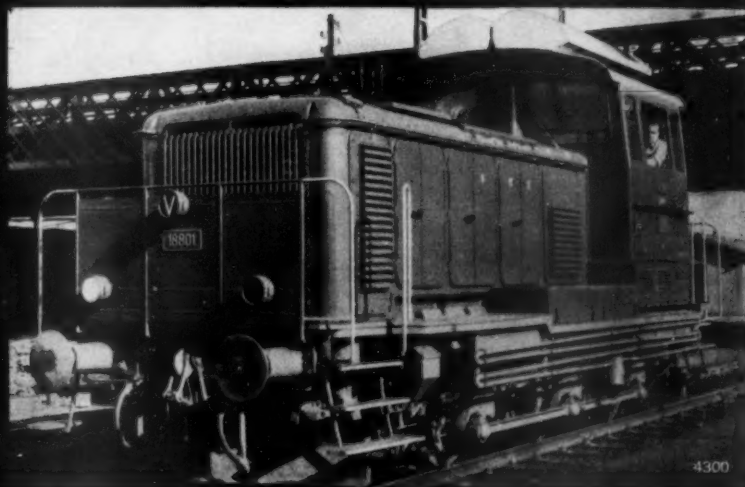


# 24

To meet traction requirements due to increasing traffic 24 more of these powerful and reliable engines have been ordered lately.

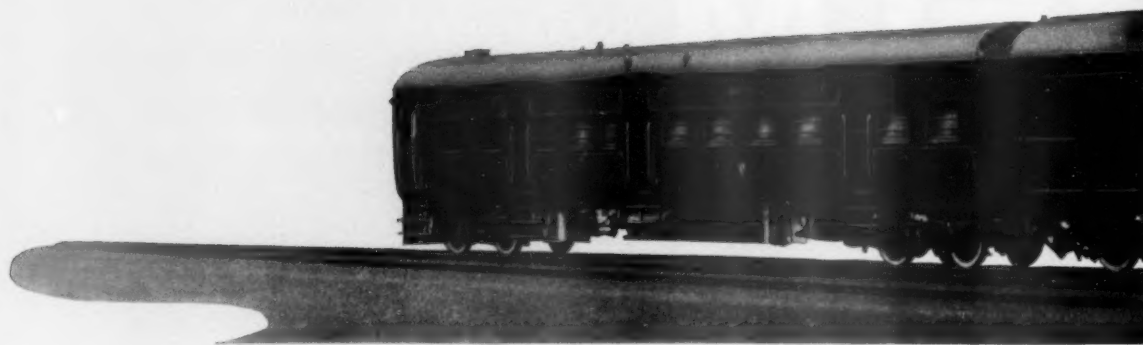
# 35

A further contract for the supply of 35 Diesel-electric locomotives, 600 HP each, fitted with SLM traction Diesel engines has also been placed by the Swiss Federal Railways.



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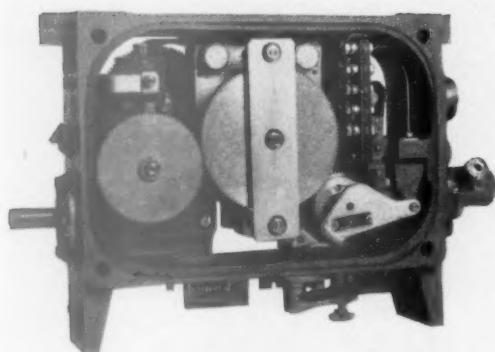


The Nigerian Railway Corporation have recently put into service two of these Twin Unit Diesel Railcars, supplied by the Drewry Car Co. Ltd., and built by Birmingham Railway Carriage & Wagon Co. Ltd. Each unit is fitted with Metcalfe-Oerlikon Patent Safety & Vigilance Control Equipment.

## ANOTHER INSTALLATION OF THE

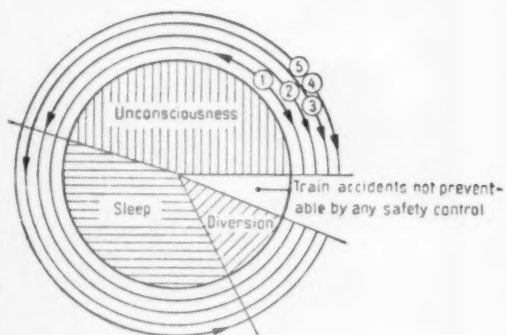


# Automatic Safety &



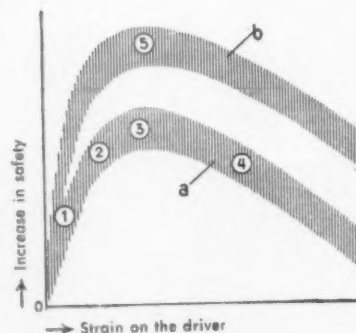
View of the safety side of the apparatus with the covers removed.

- 1 Normal Deadman's pedal.
- 2 Encased pedal for instep.
- 3 Sewing machine type pedal.
- 4 Pedal which must be periodically released.
- 5 Normal Deadman's pedal connected with the PATENT SAFETY and VIGILANCE CONTROL SYSTEM.



- a Range of existing safety controls with pedals.
  - b Range of the Metcalfe-Oerlikon safety control.
- 1-5 Various pedal arrangements as fig. 1.

THESE CHARTS ILLUSTRATE THE SUPERIOR CONDITIONS AND RANGE OF SAFETY OBTAINED FROM THE SAFETY AND VIGILANCE CONTROL SYSTEM.



For full description write for leaflet A.41

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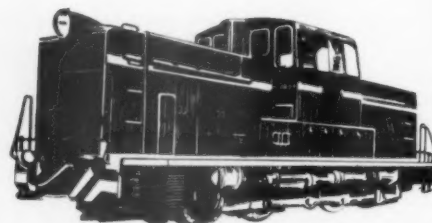
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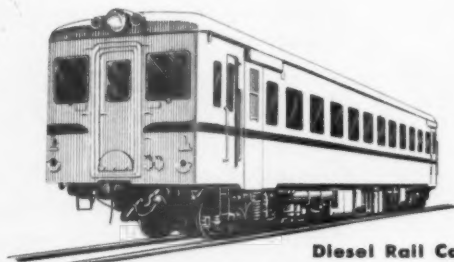
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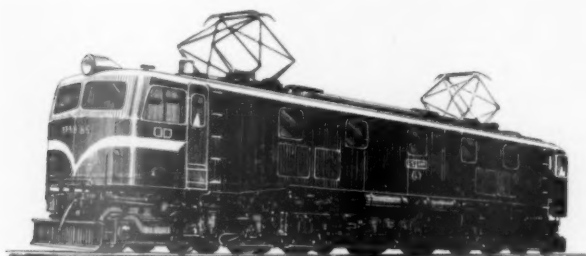
Diesel Rail Car

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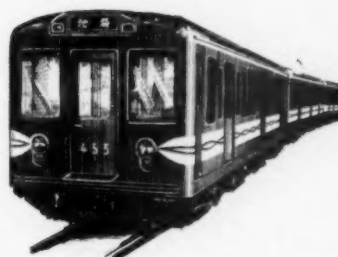
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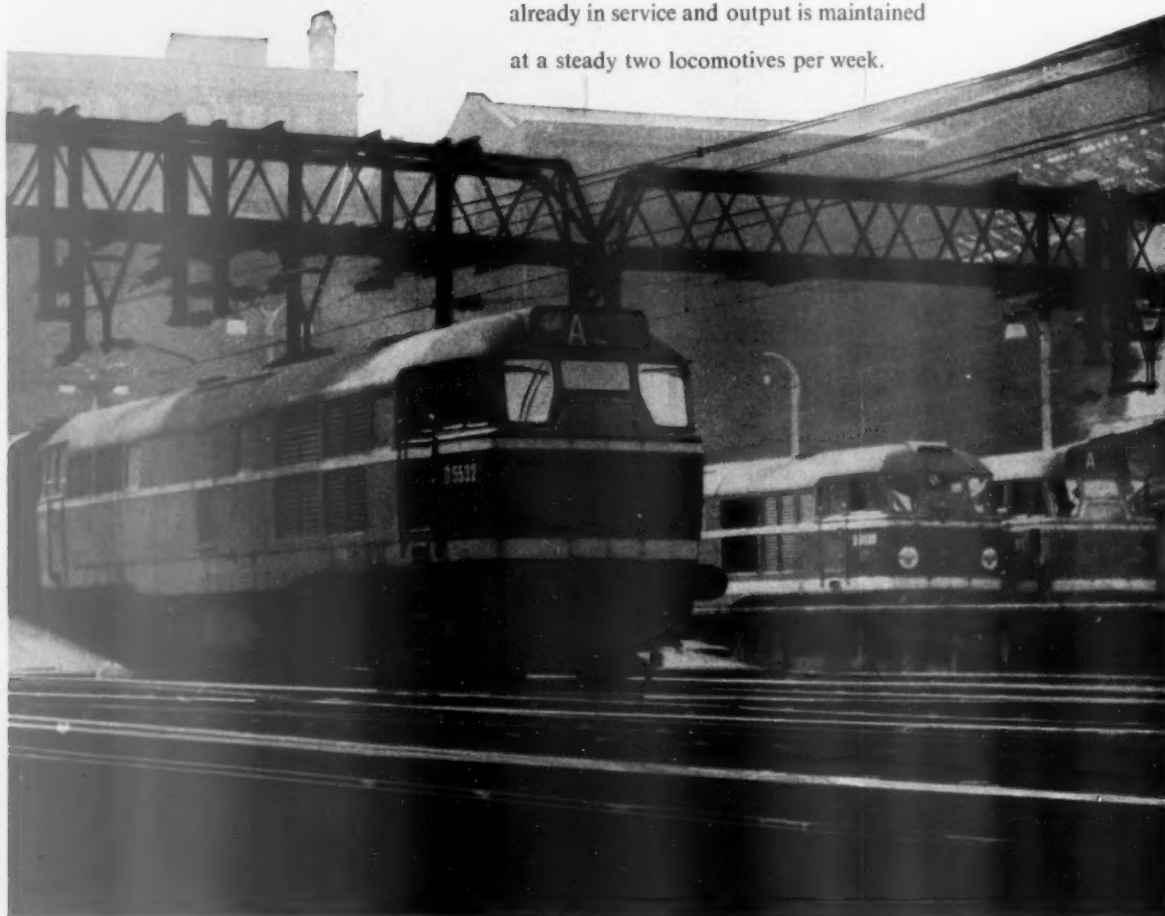
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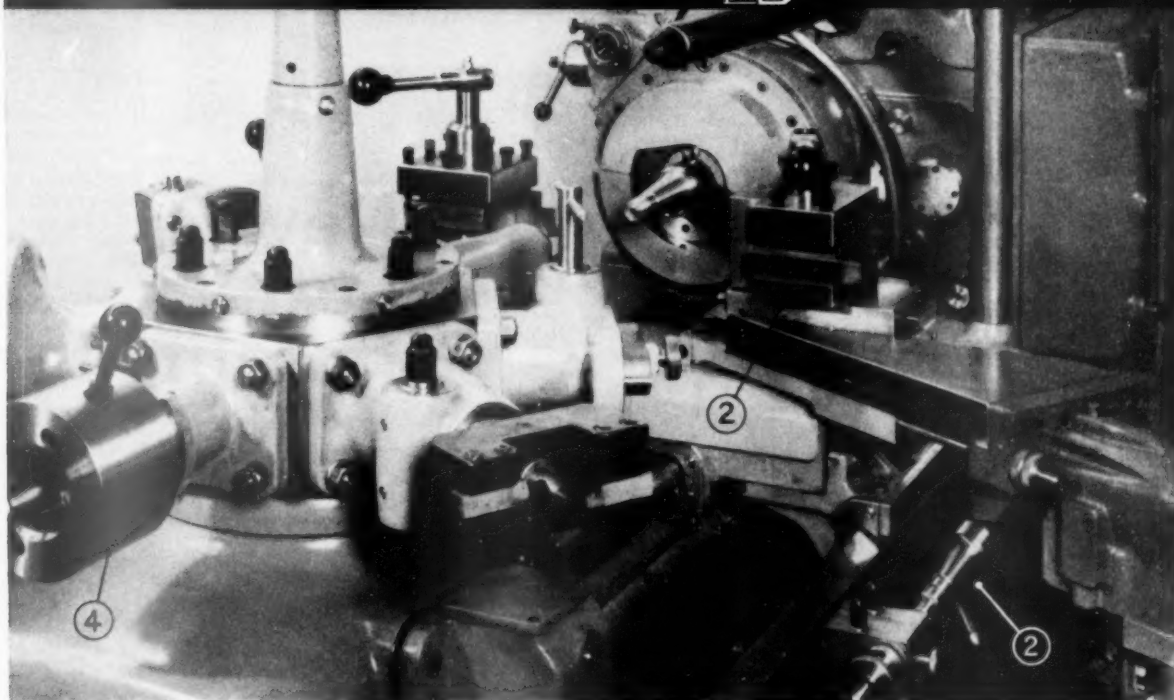
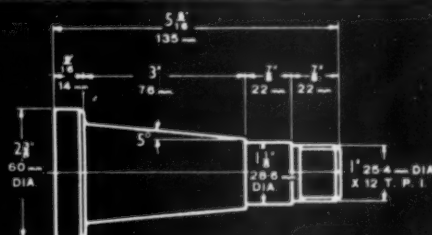
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	Hex. Turret	Cross-slide		Feet per min.	Metres per min.	Cuts per inch	m/in. per rev.
1. Feed bar to stop, close chuck & centre drill	1	—	1000	—	—	Hand	Hand
2. Support end of bar with live centre	2	—	—	—	—	—	—
Copy turn 1st. cut 7/16" deep × 43" long	—	Rear	1000	654	200	104	.244
" " 2nd. " 1/4" " × 33/4" "	—	"	1000	392	119	104	.244
" " 3rd. " 1/16" " × 5 5/8" "	—	"	1000	654	200	104	.244
3. Roller end & chamfer	3	—	1000	260	79.5	Hand	Hand
4. Screw with diehead 1" dia. × 12 t.p.i.	4	—	70	18	5.5	—	—
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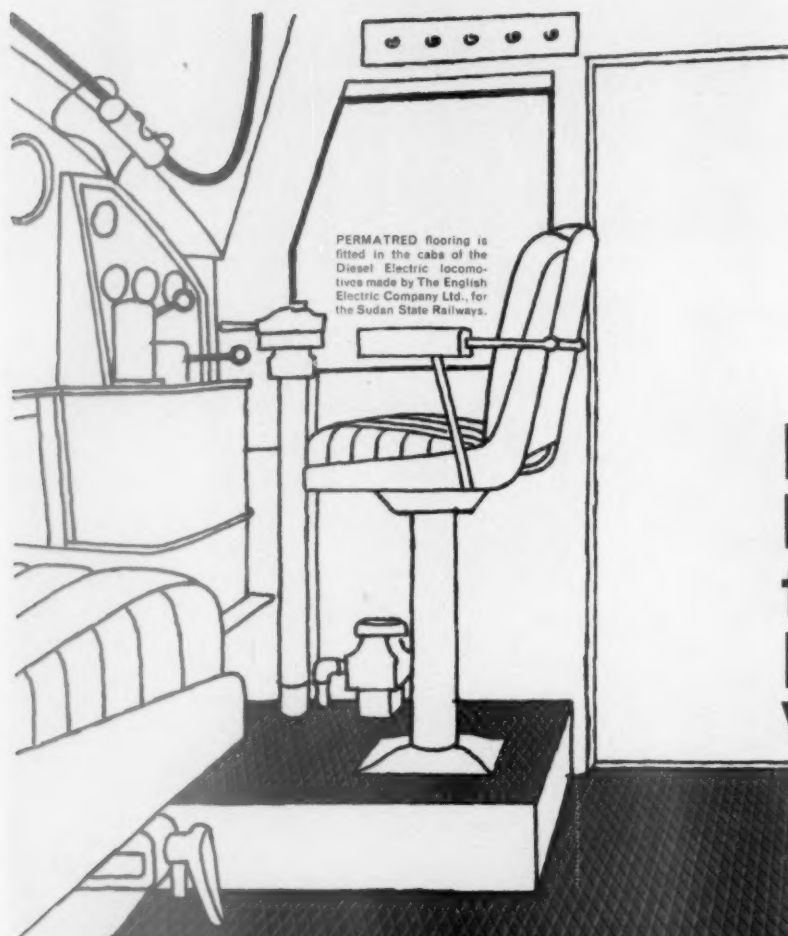
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A Journal of Management, Engineering and Operation

VOL 114

FRIDAY MARCH 31 1961

No. 13

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Editor: B. W. C. Cooke, Assoc. Inst. T.

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## Forming the Railway Board

AFTER the excitement in Parliament and in the press which followed the announcement by the Minister of Transport of the appointment of Dr. Richard Beeching as Chairman of the British Railways Board and his membership of the British Transport Commission with the purpose of succeeding Sir Brian Robertson on June 1, there has been a welcome lull. Dr. Beeching has visited the British Transport Commission headquarters and, no doubt, he is already thinking in terms of the nominations to be made to complete the board. A great deal, obviously, must depend on the personnel of this body in bringing to fruition the plans of the Government for the reorganisation of the railways. The board itself cannot have statutory power until some time next year when the necessary legislation becomes effective, but in the meantime it will act as a "shadow" body preparing the way for the major changes which will then come about. The Minister of Transport has not allayed anxiety that there will be further importations from outside, and in some quarters it is believed that at least one of these will be a prominent accountant with a large in-

dustrial practice. From the point of view of the successful operation of the railways under any scheme which may be evolved, the primary interest attaches to the railwaymen who are selected to serve on the board. It is possible that the Chairman will take a little time in making these selections, for, no doubt, he will feel the need to assess his men with particular care. It is inevitable that for some little while there must continue to be an element of uncertainty in railway affairs which cannot be conducive to improving the morale of personnel. The shorter this period can be made, the better for all concerned, and the sooner railwaymen will feel that they are on the move towards whatever objective is laid down. The White Paper proposals are extremely vague. This is probably intentional and the burden of filling in the gaps will fall on Dr. Beeching and his selected advisers over the next few months.

## Mr. J. H. Brebner

MR. J. H. BREBNER, who for 14 years has been responsible for the public relations and publicity of the British Transport Commission and before that of the London Passenger Transport Board, is retiring. His long and distinguished career in public relations stems back to the late 1920's, when he was with the Post Office, and since then has ranged over many aspects of the public relations field, both at home and abroad, in peace and war. The prominence he has achieved has been marked by the receipt of decorations, not only from the British Government, but also by those of the United States, France, and the Netherlands. When he joined the London Passenger Transport Board as Chief Public Relations & Publicity Officer in 1926, he undertook a wholesale reorganisation of the services of this department. When the British Transport Commission was formed he became Chief Public Relations & Publicity Officer to that body, and when it was reorganised in 1954 he was appointed Public Relations Adviser, the position he is now relinquishing.

## New managerial organisation for S.A.R.

THE retirement of Mr. D. H. C. du Plessis, General Manager, South African Railways, who was a railwayman by training, preference, and devotion and who quickly rose to the position of General Manager, was recorded in the personal pages of our March 17 issue as was the appointment of Mr. J. P. Hugo in his stead. Mr. Hugo has been deeply concerned in staff organisation and control and with his appointment a new managerial organisation has been introduced. Instead of one Deputy General Manager there are now two; the post of Assistant General Manager (Finance & Planning) has been replaced by two positions, Head, Planning & Productivity, and Financial Manager; the Assistant General Manager (Airways, Catering & Publicity) has become Assistant General Manager (Airways), catering and publicity matters have been transferred to the Assistant General Manager (Commercial). Control of road transport has been transferred to the Assistant General Manager (Operating) which position is now redesignated Assistant General Manager (Operating & Road Trans-



port). The Assistant General Manager (Staff) has assumed responsibility for the Railway Police. Details of the Managerial set-up at headquarters will be found in our personal pages.

### Institute of Transport dinner

THE annual dinner of the Institute of Transport was held at the Dorchester, on March 24; the chair was taken by the President, Mr. K. W. C. Grand. Proposing the toast of "Friends from Overseas," Mr. Grand welcomed the numerous distinguished guests, who included the Minister of Transport and many High Commissioners, and referred to the Institution's pride in the progress made by the overseas branches. The Institution was proud of its overseas associations which were sustained by the loyalty of its overseas friends. Replying, the Hon. Wilson T. M. Beale, jnr., Minister for Economic Affairs, the American Embassy in London, gave his impressions formed on a recent visit to America. He described the intense activity since the new President took office and noted a sense of confidence in the American economy. Mr. Kennedy's policy is to strengthen existing and new organisations and to find ways and means of solving the problem of economic growth. America and Britain, said Mr. Beale, had been allies in the past and would continue to be joined in great efforts in the future.

### Marylebone suburban services

THE introduction of diesel multiple-units on the Marylebone, High Wycombe and Aylesbury suburban service of the London Midland Region of British Railways is expected to be complete by the spring of next year. One four-car diesel multiple-unit train has already been running on the Marylebone line, and additional units will be introduced later in the year. A diesel shuttle-service is to be introduced between Amersham and Aylesbury when the London Transport Executive curtails its Aylesbury service at Amersham. In the spring of 1962 a fully diesel-operated service will be commenced, with accelerated timings on the High Wycombe line and, when London Transport introduces its new Metropolitan service from Amersham to the City, a full diesel multiple-unit service between Aylesbury and Marylebone will be provided by the London Midland Region. Details of an appointment to a new position of District Traffic Superintendent, Marylebone, will be found in our personal pages.

### Channel tunnel

A STUDY-GROUP discussion was arranged at the Institution of Civil Engineers, on March 21, on the paper "The work of the Channel Tunnel Study Group 1958-1960." The joint authors of this comprehensive review were Professor J. M. Bruckshaw (Imperial College), M. Jean Gognel (Head of the French Geological Survey), Mr. H. J. B. Harding (Consulting Engineer), and M. Rene Malcor (Delegate of the group). The group has ranged widely in its search for information, which was gathered as far afield as Japan and New York, on subjects as catholic as breakdown problems and claustrophobia. The combined responsibility of the authors was to collect as much information as possible in order to examine, without exceeding the finance available, the feasibility of a bored tunnel. To complete the study it was also necessary to consider the possibilities of (1) an immersed tube of prefabricated units in a dredged channel, and (2) a bridge, or composite construction of a bridge to the Varne Bank followed by a tunnel. The authors favoured a tunnel and concluded that geologically the scheme was feasible. They regard a twin railway tunnel, using 25,000V. electric traction, as being the cheapest form of construction and one yielding the quickest return of invested capital. With modern signalling, trains could be worked at five-minute intervals. In addition to dealing with all the rail traffic for many years to come it could carry 1,800 vehicles per hour in each direction compared with 1,300 in a more costly road tunnel.

### C.I.M.A.C. in 1962

THE Permanent Committee of the International Congress on Combustion Engines (C.I.M.A.C.) has decided to hold its sixth congress in Copenhagen during the period June 18-23, 1962. Plans include six double technical sessions and three works visits sponsored by A. S. Burmeister & Wain of Denmark and Kockums Mekaniska Verkstads A.B. of Sweden. As already announced, the theme for the congress will be: "Recent developments with diesel engines and gas turbines above 3,000 h.p. per engine and with gas engines above 1,500 h.p. per engine." The date for final submission of papers is now past, and synopses have been approved by the Permanent Committee. Further details of the programme and enrolment procedure will be announced toward the end of this year! British enquiries may be addressed to the British National Committee, 6, Grafton Street, London, W.1. The seventh congress will be held in the United Kingdom, probably during the summer of 1965.

### Electrical Exhibition

THE electrical engineers' exhibition, organised for the Association of Supervising Electrical Engineers by Electrical Engineers (A.S.E.E.) Exhibition Limited, was held at Earls Court, March 21-25. We have recently referred to the expansion of the electrical engineering industry, a further measure of which is the fact that, although this is but the tenth of these exhibitions to be held, exhibitors have grown to over 470. Communications were featured this year and the display of equipment by the British Transport Commission has already received notice (page 319). Although the B.T.C. stand was of particular attraction to railway engineers, almost every stand showed equipment which currently has a railway application. Much of this equipment has been produced specifically for railway use; in other cases standard items may be employed in railway service with little, if any, alteration. Many stands showed examples of work in connection with railway electrification, which must have brought home to many the vast ramifications of railway modernisation schemes.

### Recruits for Victorian Railways

THE Victorian Government Railways are recruiting more than 200 men a week, according to the Minister of Transport, Sir Arthur Warner, who has stated that the inflow of labour is so rapid that three additional doctors have been engaged to handle the medical examinations. The number of examinations each day has so taxed the accommodation at the Spencer Street medical centre that a specially-fitted railway carriage—a medical and vision car—had been pressed into service. Many of those recruited have been older men who are qualified tradesmen. Up to 90 men a week are starting in the Traffic Branch in positions on metropolitan and country stations, and in station goods sheds and yards. Others had started as shunters, while many young employees had commenced as junior clerks and clerical assistants. The Way & Works Branch is starting more than 20 men a day in Melbourne.

### Good performance by B.U.T.-powered trains

PERFORMANCE figures and improved results arising from the introduction of new stock are always of interest to railway administrations, and it is with this in mind that we give publicity to a statement issued by British United Traction Limited. This company has supplied well over 4,000 diesels to British Railways—mostly for installation in multiple-unit trains. Depending on area, between 50 and 200 per cent additional passengers have been won back to the railways through the introduction of these trains—the "Trans-Pennine" expresses introduced this year between the Humber and the Mersey alone have increased passenger traffic in that region by 100 per



cent. These sets are each powered by eight 230-b.h.p. horizontal diesels. Speed is another factor which has been improved by the new engines—they power trains listed among the fastest in Great Britain.

### Derby-built diesel locomotives

THE 700th diesel locomotive has gone into traffic from the Derby locomotive works. In 1932, when diesel traction was in its infancy, Derby built its first diesel-powered locomotive. It had a Davey Paxman 400 h.p. six-cylinder vertical air-start engine and the main frame was adapted from an 0-6-0 "1F" tank steam engine. In 1939 Derby commenced the building of diesel-electric shunting locomotives and continued to do so until 1960 when the 599th diesel-electric shunting locomotive was put into traffic. Derby built its 1,600 h.p. "twins"—10,000 and 10,001, with English Electric engines and electrical transmission, in 1947-48 and in 1950 a diesel-mechanical main-line locomotive, the "Fell" No. 10,100. In 1957 Derby built its last steam locomotive and became the diesel building and repair centre for the London Midland Region. The building of modern main-line diesel-electric locomotives, the B-B type 2 and the 1-C-C-1 type 4, was commenced in 1958. A total of 75 B-B type 2 and 19 1-C-C-1 type 4 diesel-electric locomotives were built from 1958 to 1960 and the 700th diesel-powered locomotive is a 2,500 h.p. type 4 No. D.21.

### Increased membership of Engineers' Guild

THE membership of the Engineers' Guild, the professional association for chartered civil, mechanical, electrical and chemical engineers, has increased by more than 10 per cent since October, 1959. The 5,000th member of the guild, who was elected recently, and invited to attend the conference the guild organised in London on March 22, is Mr. Ernest Milner, A.M.I.Mech.E., A.F.R.Ae.S., of the Aero Engine Division of Rolls Royce Limited. The theme of the conference was "The professional engineer—his employment and development." Managers, personnel officers, and professional engineers from all parts of the country met to discuss the use now being made of professional engineers. The chair was taken by the President of the Guild, Sir Hugh Beaver, and papers were presented by Mr. D. J. Mann, Mr. A. R. Cooper, and Viscount Chandos.

### Emu Bay Railway (Tasmania) developments

APART from the Tasmanian Government Railways the most important railway in Tasmania is the Emu Bay company-owned and worked 3-ft. 6-in. gauge line 88-route-mile system. The 71-mile section between Burnie and Rosebery is attracting increasing tourist traffic and in consequence the daily railcar service is now superseded by an up and down train known as "The West Coaster." For this service two locomotives have been converted to burn oil fuel, and passenger stock, including observation cars, has been renovated to attract additional traffic. At Rosebery connection is made with Transport Commission coaches providing road services to Zehan, Strahan and Queenstown. The Emu Bay Railway has also arranged for the Rosebery-Guildford section of its line to be included in a 13-day coach tour, the coach and its passengers being conveyed over the 33 miles between these stations by rail, as there is no suitable road available.

### Re-signalling at Barking

ONE of the main consequences of the modernisation from Bow through Barking to Upminster has been the almost complete segregation of the London Transport and Eastern Region (London, Tilbury & Southend section) lines. Those who remember the former net-work of lines at Barking will realise that this has greatly facilitated traffic. It has also meant that

each line is now signalled separately, though as a matter of convenience both the London Transport and Eastern Region signalboxes at Barking are housed in the same building. The former installation, which covers a territory from Bromley to Dagenham East, is described elsewhere in this issue. It follows standard London Transport practice, in that it operates through a number of local interlocking machine rooms. The operating panel is of the push-button type, and there is an auxiliary panel for use at peak-hours. This latest London Transport signalbox is of an extraordinarily neat and compact type. With the general adoption of "programming," it may conceivably be the last London Transport will build.

### Diesel trains

A CONSPICUOUS feature of the growth of diesel traction in various parts of the world is the development in recent years of self-contained diesel train-sets, usually designed for specific main-line and inter-city services. In our January 6 issue, the diesel-hydraulic trains built for the "Hatsukari" limited express service of the Japanese National Railways were described, and, in the same issue, attention was drawn to the great difference between the power equipment installation on these trains and that of the diesel-electric Pullman train-sets operating on the Western and London Midland Regions of British Railways. It was thought that a comparison of these trains would provide an interesting subject for study.

Taking the power equipments first, the arrangements adopted in the four designs of train fall into two basically different categories. These are the undercar-mounted multi-engine system represented by the Japanese diesel-hydraulic and the B.R. diesel-mechanical trains, and the engine-room-mounted arrangement adopted for the diesel-electric equipments of the Pullman trains and the Hastings units. The Japanese method is to instal, in a nine-car formation, a total of 14 high-speed engines, each of 180 h.p., distributed so that eight of the nine cars are power cars, the total rated output being 2,520 h.p. Each engine drives one axle of the adjacent bogie through a hydraulic torque-converter, propeller shaft and a combined reduction-and-reverse gearbox. The installation on the Trans-Pennine trains, which run as six-car sets, consists of eight high-speed engines, of 230 h.p., totalling 1,840 h.p., arranged so that four of the six cars are power cars. The transmission system is a fluid coupling connected by cardan shaft to an epicyclic gearbox, followed by a second cardan shaft to the forward-and-reverse gearbox on the adjacent axle.

The eight-car and six-car Pullman trains, and the six-car Hastings sets each have a single diesel-generator equipment housed in the engine-room of a power car marshalled at each end of the unit. The two main engines of the Pullman sets are of 1,000 h.p., at 1,500 r.p.m. each, making a total of 2,000 h.p. per train; those of the Hastings units are of 500 h.p., at 850 r.p.m. each, giving a total of 1,000 h.p. per unit. On the Pullmans, each diesel-generator set supplies power to four traction motors; two mounted on the inner bogie of the power car and two on the adjacent bogie of the car coupled to it. The arrangement on the Hastings units is similar, except that only two traction motors, mounted on the power car inner bogie, are provided for each diesel-generator set. Normal axle-hung motors are used in the Hastings trains, but the Pullmans are equipped with bogie-frame-mounted motors and resilient drive to the axles.

From the above, a fair indication may be obtained of the two methods of approach to the question of providing a suitable traction power installation. It may be of interest at this stage to examine some of the main features of the two systems, particularly from the point of view of maintenance. Taking the Japanese arrangement as an example of one method, its 14-engine installation involves a total of no less than 112 cylinders and their associated piston and connecting-rod assemblies, valve gear, and fuel injection equipment—a formidable array. It is understood that the choice of the

particular engine adopted was mainly governed by the fact that it is of standard type in extensive use on other railcars, with consequent advantages in interchangeability, and in thus facilitating the replacement of faulty engines. For maintenance work on the engines *in situ*, the undercar method of engine mounting will involve working under cramped conditions and in awkward positions, and in having to contend with the dirt which is bound to collect on engines in an exposed position.

The difficulties of maintenance are likely to be far less in the case of the engine-room-mounted power units, as exemplified by the arrangements on the Pullman and the Hastings trains. Here the equipment can be kept clean and is reasonably accessible. The light and comparatively spacious layout of the engine-rooms on the Hastings trains is noteworthy. Maintenance is further simplified in that, in each design, only two power units per train set are fitted, incorporating, in the case of the Pullman, a 12-cylinder engine, and, in the Hastings, a four-cylinder engine.

The auxiliary power installations in the four types of train vary considerably, mainly because two of them, the Japanese and the Pullman, are equipped for air-conditioning, while the other two have the more simple forms of coach heating only. The Japanese and the Pullman arrangements are similar in so far as they both use three-phase a.c. current, supplied, in the case of the former, by two nose-end-mounted diesel-alternator sets with a third set undercar-mounted as a stand-by, and, in the latter, by two undercar-mounted sets. The Pullman units have, in addition, a 110-V. d.c. system supplied by an auxiliary generator driven by the main engine for the compressors, control gear, and generator field excitation, and a rectifier-fed 24-V. d.c. system for starting the auxiliary engines, and supplying fan motors and auxiliary control circuits. On the Japanese trains, control circuits are on a rectifier-fed 100-V d.c. system, and a 24-V d.c. system, supplied by engine-driven dynamos, is used for engine starting. In effect, in both designs, no less than three distinct auxiliary systems, some a.c. and some d.c., and at different voltages are used; not an ideal arrangement, particularly from the spares and maintenance points of view.

Power for the various auxiliary machines on the Trans-Pennine units is derived from the main engines through mechanical drives, of either belt or gear types. These include low-tension generators for supplying engine-starting and control systems. An entirely separate coach-heating system, consisting of combustion-air heaters, mounted under each car, from which warmed air is distributed by ducts to the interior of the coach.

The normal arrangement of auxiliary equipment, including motor-driven compressors, control gear, batteries, and lighting, is supplied by the main-engine-driven auxiliary generator on the Hastings units. The electric train-heating equipment is fed from the main traction generator, and is at varying voltage when the generator is carrying the traction load as well. With the traction load off, the heating system is energised at a constant voltage.

Alone of the four designs, the Trans-Pennine unit is equipped with vacuum brakes; the other three are fitted with E.P. brakes. The Pullman unit has also a high-speed brake feature incorporated, which automatically allows an increased brake pressure to be applied at the higher speeds.

### Shock-recording apparatus

ONE of the hazards encountered in the process of conveying goods by rail is the treatment suffered by the goods during shunting operations, and as the result of unskilful handling of loose-coupled freight trains. In these days of severe competition between different forms of transport, any measures designed to reduce the likelihood of damage to consignments during rail transit are well worthy of study. It is, therefore, interesting to learn of the investigation which has

been carried out on the subject of shock-recording by the Office of Research & Experiments of the International Union of Railways. Brief reference was made to this aspect of research work undertaken by the O.R.E. in the issue of February 24, 1961, and it is now proposed to review the matter in greater detail.

A specialists committee, formed to consider the question, divided their investigation into two parts; first, to determine the definition of a satisfactory standard shock-recorder, and secondly, to discover the permissible limit of speed of impact between two vehicles. Accordingly, for the first part of the investigation, a test programme was drawn up, comprising three different categories of tests, to enable a comparison to be made of the characteristics of the various shock-recorders used by certain railway administrations. The first set of tests formed part of a detailed laboratory study of the various types of recorder.

These tests showed that a satisfactory shock-recorder should possess the following qualities. The natural frequency of the apparatus must exceed a value of 7.5 cycles per sec., otherwise the natural frequency of a wagon, with buffers compressed as the result of impact, may set up resonance in the apparatus and affect the recording. The recording should be on a wax paper to give the greatest accuracy and the most legible inscription. The number of fulcrum points and rollers should be kept to the minimum, as these items are subjected to considerable wear caused by the large accelerations produced on the recording apparatus. Lastly, a regular rate of feed of the paper should be maintained.

The second group of tests was carried out by mounting the recorders on a ramming apparatus, consisting of a block of known weight which is allowed to fall on a vertically-mounted wagon buffer. The purpose of these tests was to check whether the readings of the various recorders remained comparable over a given period of time, and to determine the extent to which the indications were affected by variations in the spring system under a given shock. It was found that, for each type of recorder, the values of shock amplitudes remained practically constant under repeated tests with the same impact speed. Also, a given shock amplitude may correspond to widely different impact speeds according to the spring characteristics of the buffer used in the tests. It was also shown that the indications given by two recorders of the same type, under identical conditions of impact speed and type of buffer, were practically coincident.

The third category of tests was more elaborate, as it involved the use of freight wagons, variously loaded, and fitted with different types of buffers. The aim of these tests was to see how far the indications given by each shock-recorder may be relied on with regard to the subsequent evaluation of the actual impact speed. Tests were conducted with seven combinations of the following types of buffers: volute spring, standard S.N.C.F. rubber spring, D.B. ring-spring, and oleopneumatic. The test procedure consisted of moving a loaded wagon against a stationary wagon at various speeds of impact. The moving wagon was of the covered type, specially prepared and equipped for the tests. The sides of the wagon were removed and replaced by large mesh wire-netting to enable the behaviour of the contents of the wagon to be observed on impact. The load consisted either of sleepers to represent a typical load, or of crates of bottles, representing a fragile load. The stationary wagon was of the unbraked, open type, loaded with coal, its total weight being 40 metric tons.

The buffing tests showed that in a series of impacts produced at a given speed with a particular combination of buffers, the records obtained by the different shock-recorders varied only slightly. They also indicated that, at low speeds, some recorders were more sensitive than others to variations of the impact speed. The latter tests have also served the purpose of the second part of the investigation, namely, to find the permissible limit of impact speed. The measurements obtained have enabled an impact speed to be determined, below

which normal loads, correctly packed and properly stowed, suffer no damage from collision shocks, irrespective of the type of buffers fitted, and the load of the wagons.

### New South Wales Government Railways

A "significant and satisfying" event of the operations of the New South Wales Government Railways in the year to June 30, 1960, was the achievement of a new peak level of earnings and a record tonnage of freight carried, according to Mr. N. McCusker, Commissioner of Railways. In his annual report, a copy of which he has sent us, Mr. McCusker states that at £83,562,706 earnings exceeded the previous record year (1956-57) by over £4.75 million, and were £7.6 million better than in 1958-59. The profit on operations was £7,071,279, or £2,242,737 above the previous year, but with working expenses rising by £5.3 million because of uncontrollable increases in material and wage costs, and with heavy fixed capital charges, the year closed with a deficit of £4,108,221. However, this was £1.9 million better than the £6 million deficit budgeted for, and represented an improvement of £2.34 million on 1958-59.

Many factors contributed to the better results: favourable seasonal conditions, leading to an advance of no less than 35.22 per cent in wheat traffic to 58.6 million bushels; the continued introduction of diesel motive power—23 additional diesel locomotives were commissioned; completion of the electrification of the Northern Line between Hornsby and Gosford; the putting into service of new bogie wagons permitting express freight services; and the drift in passenger traffic apparent in recent years was arrested, with a slight increase in passenger journeys and revenue. The diesel traction programme went ahead with the addition of three main-line and 20 branch-line diesel-electric locomotives, bringing the total of diesel units in service at the end of the year to 110. Tenders were invited and orders placed for ten 900-h.p. branch-line diesel-electric locomotives. Modernisation and extension of signalling and communications plant was continued to keep abreast of the steady growth in demand for improved facilities.

Some of the principal results were as follow:—

	1958-59	1959-60
Total miles open	6,103	6,108
Total earnings	£75,930,792	£83,562,706
Working expenses	£71,102,250	£76,491,427
Balance	£4,828,542	£7,071,279
Percentage of profit to capital invested	1.75	2.47
Percentage of working expenses to earnings	93.64	91.54
Earnings per train mile	517.75d.	545.25d.
Passenger journeys	254,055,033	254,589,596
Goods and livestock tonnage	19,699,844	22,127,217

Freight revenue provided over two-thirds of total revenue, increasing by £6 million to £56.6 million. Tonnage went up by nearly two million tons over the previous record year of 1953-54 to 22.1 million tons in the latest period. Considerably greater operational efficiency contributed to this result, flowing from accelerated freight-train schedules made possible by the use of electric and diesel locomotives with their faster turn-round. Despite advances in operating efficiency and the general economies effected, added costs consequent on the 28 per cent rise in wage margins necessitated an increase of 6 per cent on most commodities from March, 1960.

The number of passenger journeys totalled 254.6 million, or 0.5 million more. The Department inclines to the view that unless the habits of the travelling public undergo a pronounced change, losses on providing passenger services must inevitably continue. The greatest proportion of the Department's transport effort was expended in providing passenger services, which made only a 26 per cent contribution to total revenue. There was considerable extension of electrified rail services during the year. Orders were placed for the construction of additional luxury trains that were expected to be introduced during November, 1960.

During the year contributions of £1.8 million were received from the Government, the same level as in the previous few

years. Mr. McCusker points out that comparisons between the financial years 1959-60 and 1958-59 are affected considerably by the writing off of £73.2 million gross of the capital indebtedness of the Department, the consequent adjustment in capital debt charges, the establishment during the year of a Government Railways Renewals Fund, and the introduction of a different accounting procedure in respect of the retirement of assets. It is estimated that the improvement in performance between the two years could be assessed, after allowing for these factors, at about £5 million.

The total of concessions granted was higher at £586,280, including £475,909 freight rebates and £35,778 allowed on passes to blind soldiers and their guides. In addition, the State Treasury bore debits in respect of rebates and concessions of various kinds of £1.67 million.

In the sphere of material purchases the report refers to the problems associated with purchasing 80,000 items costing over £18 million yearly. An electronic data-processing programme aimed at more exact stock control has been initiated. The future holds promise of better plant, profitably-costed freight services, more effective methods of providing statistically reliable schedules for competitive charges, and fuller use of all types of railway equipment. Australian firms now supply 93 per cent of the Department's needs, compared with 88 per cent five years ago.

A special section of the report deals with research and development. Flaw detection by ultrasonic test was further improved, and the use of radioactive isotopes in flaw detection was also made possible by acquisition of new equipment. Real estate development has gone ahead, and revenue from this source continues to increase.

Finally, Mr. McCusker looks to the future. The steadily growing population and expanding economy will undoubtedly generate additional goods and passenger traffic, he says. Although competition will be intense to secure this traffic, the railways' share in such new traffic should not be inconsiderable. The coming opening of the standard gauge line between Sydney and Melbourne, although expected to divert to rail considerable tonnages of freight now carried by other forms of transport, nevertheless emphasises the need for better co-ordination of all transport services, Mr. McCusker stresses.

### Freight train traffic trends

FROM A CORRESPONDENT

FROM a revenue earning point of view, our railways have made a poor beginning to 1961. In four weeks to January 29 they originated 20,346,000 tons, 308,000 less than in 1960. The 1.5 per cent decrease would not have mattered much if it had not been accompanied by an increase of over 10 million in the ton-miles worked, while freight train revenue was lower by £754,000, or 3.5 per cent. Both merchandise tonnage and ton miles were over 2 per cent higher, but receipts were down 2.2 per cent, or in hard cash, £185,000.

In the next four weeks to February 26 merchandise receipts were up £384,000, or 4.9 per cent, but decreases in mineral and coal receipts amounted to £11 more, bringing the total loss in two weeks to £765,000, or 1.7 per cent. As the cost of working this year is bound to be high, any tendency to move more traffic for less pay will have to be watched carefully.

A curious feature of the Regional results for the first four weeks of this year was the decrease in the London Midland, Western and Scottish Regions both in tonnage and ton miles compared with increases in the other three Regions. The North Eastern had an exceptional rise of 239,000 tons (5.1 per cent) and worked 6,462,000 more ton miles (3.3 per cent); the Eastern with a small increase of 34,000 tons, less than 1 per cent, worked 15,360,000 more ton miles (5.1 per cent), a 2 per cent rise in its mineral tonnage producing 6,349,000, or nearly 8 per cent, additional ton miles. Business was evidently brisk on the eastern side of the country!



## LETTERS TO THE EDITOR

THE EDITOR IS NOT RESPONSIBLE FOR THE OPINIONS OF CORRESPONDENTS

### UNFAIR TO BRITISH RAILWAYS

February 24

SIR, The underlying reason for the financial and other troubles of British Railways has again been outlined by the latest outrage perpetrated against his fellow citizens by that modern Vilain Hérodes, Mr. Ernest Marples. While a thumping good time could not be had over Christmas by all connected with the railways, Mr. Marples has succeeded in assessing an outstanding thump to the morale of all connected with British Railways and to that insolent ingrate, the average British taxpayer, who has had the insolence to demand that his huge financial interest represented by British Railways should not be dissipated and destroyed by the iniquities perpetrated with such zeal by the present Minister of Transport and his cohorts.

In your issue of December 16, you report that the House of Lords felt strongly that there was a Government bias in favour of road transport, but you did not stress the reason for such bias, which Mr. Marples has made only too obvious. The Government is determined to prove to the electorate at large that nationalised industries are uneconomic, cannot properly serve the interests of the public and are the unfortunate results of the theories of the silk-shirted proletariat (known to our trans-Atlantic cousins as "eggheads") and hence that British Railways, the most prominent among the nationalised industries, must be destroyed.

#### ROAD TRANSPORT PRESSURE

I also strongly suspect that the zeal demonstrated by Mr. Marples in carrying out the unexpressed but obvious intention of his ministerial colleagues in regard to British Railways has been honed by pressure brought to bear by private road transport interests, which will greatly benefit by any further decreases in movement over British Railways and which have profited and are profiting greatly at the expense of the British public. This is because they are not called on to pay more than a fraction of their fair share of the cost of construction and maintenance of the road system of Great Britain and, are the direct and only cause of the operating deficits incurred by British Railways. Not only does the taxpayer have to provide and maintain at his expense these highway facilities that the road service operator uses to his personal profit, but he must cover the losses incurred by his property, British Railways, resulting from road competition.

Most members of the public understand that British Railways can only operate efficiently and economically when its huge physical plant is being used to something approaching normal capacity. If a large part of the freight and passenger traffic is syphoned off by road services (and by that term I cover "C" licences, road services handling freight for hire and inter-city bus and coach services) then British Railways cannot cover cost of operation and progressively heavy deficits must result.

On the other hand, "C"-licence operators, road-service freight carriers for hire, and inter-city bus and coach services could not compete with British Railways if they had to pay their fair proportion of the cost of highway construction and maintenance.

Although he knows these facts, Mr. Marples intends to implement his policy by squandering many tens of millions of pounds on additional, unnecessary, redundant, and uneconomical motorways, which in turn will cause a substantial increase in privately owned but publicly subsidised road services and result in still further inflated deficits from British Railways.

The deficit from British Railways, averaging more than £40 million a year and for which the British taxpayer has every right to hold Mr. Marples personally responsible, represents

80,000 jobs at an average salary of £500 a year and if you consider that this is but a moiety of the cost of Mr. Marples's transport policies to the taxpayer, it is not an exaggeration that Mr. Marples is depriving the British economy of the equivalent of 160,000 jobs at an average wage of £10 a week.

It is debatable for how much longer this drain can be supported by the strained national economy, which, by clear signs, seems to be not so healthy as optimists would have us believe. The railway motive power, rolling-stock, and materials industries, both diesel and electric, can thank the vacillating, incoherent, and erratic policy of Mr. Marples towards modernisation of British Railways for the parlous conditions they now have to face, which also will have grievous consequences in their struggle to maintain their fair participation in available export markets. The uncertainty in which Mr. Marples's vacillations have placed them will inevitably prevent them from quoting such keen competitive prices or from offering sufficiently long credit terms to secure any of the contracts now and in the future available abroad.

#### BASIS OF USER TAXES

British Railways could be placed on its financial feet and a saving of over £100 million a year to the Treasury effected, if a sane transport policy were to be followed by the Minister. All that is required is to return to British Railways that proportion of passengers and freight now moving by highway that could be more economically moved by rail. The procedure is simple. "C" licence holders, road service freight haulers, and inter-city bus and coach operators should be required to pay user taxes based on net freight ton-miles and passenger-miles sufficient to cover their fair share of the expense of construction and maintenance of highway facilities.

"C" licence holders would no longer find it profitable to perform their own inter-city freight transportation, but would confine haulage operations to feeder services and pickup and delivery services at the nearest railhead. Road service for hire operators would likewise find it uneconomical to compete with British Railways and would have to confine operations to their proper sphere, that is, providing freight services in districts not directly served by British Railways and to pickup and delivery services to railheads. Bus and coach services automatically would be restricted to districts without rail passenger service and to those services where the paucity of passenger travel is insufficient to justify railway passenger service.

Although road transport interests would claim that unemployment in the road transport industry would result, this would be false, as a proportion of road transport employees would be absorbed in pickup and delivery services to railheads and employment on British Railways would increase so materially that unemployment in the road transport industry thereby would be compensated.

The improvement of British Railways' finances would permit a consequent improvement in the pay of the railway rank and file and allow railway pensions to be increased.

Nowhere have I seen any commiseration expressed for the plight of the taxpayer, who in the end has to bear the high cost of ministerial blunders. All politicians of all parties consider that they have a divine right to plunge their hands in the pockets of their fellow citizens, to waste the Englishman's hard-earned substance on the equivalent of Gambia chickens and monkey-nuts from Kenya. The Conservative Governments have shown themselves to be equally callous towards the miserable taxpayer as ever their predecessors in the Labour Governments did.

CHARLES JOHN GREGG

International Railways of Central America,  
Guatemala City, Guatemala



# The Scrap Heap

## Collector's piece

At South Kensington station, Victorian Government Railways, there are for sale, some early issues of railway parcels stamps, each bearing a winged design. Illustrations available are: 2d., printed blue on white paper; 3d., green on white; 4d., red on blue, and 9d., red on white. Collectors requiring any of them should send a stamped return envelope and the appropriate remittance to the Station-master, North Melbourne, Victorian Government Railways.—From "Victorian Railways News Letter," January, 1961.

## "Merely underground"

For merely underground railways, electricity seems clearly to have established its superiority over steam. Merely atmospheric conditions would appear to have settled that question, as is clearly shown by the fact that two underground lines at present dependent on steam power have for some time been considering the question of converting into electric roads.—From "The Financial Times" of January 21, 1901.

## Pantograph on steam locomotive

The standard-gauge Taunusbahnen tramway system in the Frankfurt (Main) area was acquired a few years ago by the Frankfurt municipal transport undertaking. Besides the electric tram service, goods traffic is worked, usually by an electric locomotive, mostly to and from factories linked with the tramway system by private sidings, and with the German Federal Railway. The 0-4-0 steam locomotive *Hohemark*, shown in the illustration, is fitted with a pantograph for use with overhead signalling equip-

ment mounted alongside the current supply. The *Hohemark* was built in 1900 by the Locomotivfabrik Hagans, of Erfurt. It is fitted with two sets of couplings, for Federal Railway and tramway stock. Early in the century the engine used to haul three tramway passenger trailers at peak traffic periods.

## And so they nationalised the wind

The following was written by Sir Sam Fay in 1944:

Circa 1950. By decree of the country's rulers a committee of incorruptibles was formed to comb out the provinces with a view to the tabulation of enormities perpetrated by capitalists. Comrade McMutt from the far north found himself a commissar and a member of this committee, and proceeded in accordance with an allocation of a member for each county, to investigate Southshire. They were beginning to despair, when his wife descried a windmill, and asked McMutt what it was for. "A windmill," exclaimed McMutt, "it means that some capitalist is driving a mill by using wind without paying for it."

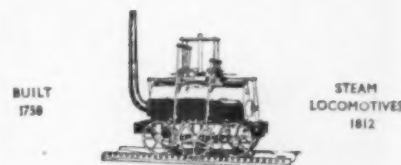
McMutt found it quite easy to create a national demand after he had interviewed secretaries of various London district organisations, and upon a never-to-be-forgotten Sunday, Trafalgar Square was invaded by processions from east, west, north, and south. "Down with the wind stealers." "The air for the people." "Up, McMutt." "We demand our birth-right." These and other inscriptions appeared on the brightly coloured banners. McMutt was the idol of the hour, and when he addressed London's "working man" cheers were loud and long. He demanded the nationalisation of all means of production by the use of the air.

A strongly worded demand addressed to the Government was carried by acclamation. Later on the Cabinet, impressed—so they said—by the overwhelming evidence of the country's conscience, decided to include the air and appurtenances thereof in the list of national industries.

And so they nationalised the wind.

## Goods from the Middleton Railway

A novel and practical form of publicity has been adopted by the preservation society which has taken over the working of part of the Middleton Railway, in the outskirts of Leeds. Wagon labels bearing the name of the railway are being used to consign goods from firms with siding connections to this line to stations on British Railways, and these have been noted at stations far removed from the



## Middleton Railway

WAGON NO. DATE

FROM Clayton Son & Co.  
DARTMOUTH WORKS

TO

VIA HUNSLET & British Railways

Wagon label for freight traffic from the Middleton Railway

West Riding of Yorkshire. The Middleton Railway, formed in 1758, and worked by horses for many years, was the first for which an Act of Parliament was obtained. The locomotive depicted on the wagon labels was the *Salamanca*, built in 1812, by Fenton, Murray & Wood, of Holbeck, using Blenkinsop's patent rack system.

## On the wagon

Because of the line's (Hayle Railway, West Cornwall) isolated nature, general traffic was inevitably light, though occasional excursions must have been profitable enough. The first of these, in 1852, took the Redruth and Camborne Temperance Societies to Hayle. Three squat locomotives struggled valiantly with '76 mineral trucks filled with teetotallers singing:—

"Happy Camborne, happy Camborne,  
Where the railway is so near;  
And the engine shows how water  
Can accomplish more than beer."

On the return, the locomotive ran out of steam and the procession halted opposite an orchard. In the words of one chronicler:—

"It may have been their extreme anxiety to take measures against such an intoxicating beverage as cider, but at all events that army of teetotallers swarmed down from the trucks and up the apple trees until the orchard resembled the famous cupboard of Mother Hubbard." From *A Regional History of the Railways of Great Britain*.



Photo]

[K. F. Metz

Steam locomotive of the Frankfurt (Main) tramways fitted with pantograph

# OVERSEAS RAILWAY AFFAIRS

FROM OUR CORRESPONDENTS

## ARGENTINE

### Strike on Mitre

The engine and motormen's union—La Fraternidad—recently ordered its members on the Mitre Railway to work to rule for an indefinite period because of a dispute over working conditions. The Victoria section of the union ordered a 24-hr. strike, which paralysed the electric service between Retiro and Tigre. Services to Delta and José León Suárez were carried out normally. A basis for agreement was found a few days later, and the movement was cancelled.

### Accidents on Mitre and Sarmiento

Two serious accidents affecting suburban electric trains occurred in February on the Argentinian Railways. On February 21, an electric train of the Mitre Railway derailed at Malden Junction after leaving Retiro for Tigra, the coaches blocking all four lines. Main-line and suburban services were suspended until the following day, and an emergency service of road vehicles was established between Retiro and Belgrano and Colegiales, the last two stations serving as temporary termini. Five days later, an electric train of the Sarmiento Railway,

running between Castelar and Once, crashed into the rear of a goods train running in the same direction and on the same track. The last wagons of the goods train were rammed into the supporting columns of a footbridge, which collapsed on the track. Traffic was suspended for 16 hours, during which time the electric service began and ended at Caballito.

### More passenger traffic

Argentine State Railways state that passengers carried during 1960 amounted to 620 millions—in 1946, the figure was 282 millions. Total number of coaches has increased from 3,900 to 4,500 units, but of these, a large proportion has passed its useful life and thus has to spend more time under repair.

## CANADA

### Ontario Northland restaurant services

The Ontario Northland Railway, running 500 miles northward from central Quebec to the tip of James Bay, has cut meal prices in its restaurant cars by up to 50 per cent to bring them in line with typical restaurant prices in the area. It has also introduced new equipment, including a converted ex-U.S. Army ambu-

lance car. The conversion, which was carried out in the railway's workshops at North Bay, has provided an 85-ft. kitchen and lunch-counter vehicle with 24 seats, air-conditioning, and stainless-steel outer panels.

### Indigenous coaches for Toronto subway

The Toronto Transit Commission has awarded to the Montreal Locomotive Works Limited the contract for the supply of 36 new subway (underground) cars for the two-mile University Avenue section of the Bloor-Danforth-University subway at present under construction in the Queen City. These cars will be composed of 90 per cent Canadian material and the labour employed on them will be equally indigenous. The remaining 10 per cent of the material is in the form of components not made in Canada. Earlier cars were British built. Equipment for the new cars will be supplied by more than 30 Canadian firms, but the brake equipment will be by the Westinghouse Brake & Signal Company of England. The new cars will be 74 ft. long, 17 ft. longer than the earlier ones, at an estimated saving of nearly \$600,000. The width is 10 ft. 4 in. and weight 24 long tons. Each car seats 84 passengers, and there are four doors on each side. Trains will be made up of from two to six cars. Vocal communications between each train and a central control office and between motormen and guards are being provided.

## IRAN

### Main-line resignalling

Despite full diesel working, growing traffic has made desirable still further increase in line capacity over the 655-mile single-track main line from Teheran and Khorramshar, on the Gulf, which has 92 tunnels, long stretches at the ruling gradient of 1 in 67, and a summit level of 8,000 ft. Therefore the whole signalling system came under review some time ago, particularly at the numerous crossing stations, which are now being fully used. Previous Japanese-built equipment has been taken out, and Siemens and Halske is now far on with the installation of electrical equipment at all the 51 small stations and seven larger stations on the route. At the small stations electric point operation and locking is being installed, along with track-circuiting of



Photo]

[J. O. Slezak

Left, all-steel sleeping cars of Russian railways with woman guard; right, four-rail track for standard and broad gauge

the crossing loops and approaches, so that greater safety against accidents and derailments at the points is obtained, along with reduction in staff and number of point frames and cabins. At the seven larger stations full d.c. track-circuiting and electric point operation is being installed throughout the whole station area, and controlled from one signal box at each location.

## WESTERN AUSTRALIA

### Track recorder car

The Western Australian Government Railways administration has recently used the underframe, bogies, and body-shell of a condemned steam railcar to construct a track-recorder coach. The conversion was carried out at the railways' Midland Junction workshops. The new 3-ft. 6-in. gauge, 59-ft., 27-ton vehicle is equipped with a Hallade track recorder, placed on the floor directly over one of the

bogie centres, as well as speed indicators, gauges, thermometers and the other usual recording plant. Telephone communication with the driver of the train is provided.

## VICTORIA

### Clearance wagon

To facilitate rail movement of large loadings, such as the 125-ton stator recently transported for the State Electricity Commission, a special "clearance wagon" has been designed by Victorian Government Railway engineers, and constructed at Newport workshops. Originally a guard's van, the vehicle has been modified so that only portion of the van remains as an observer's cabin. The front portion of the vehicle has a large framework with movable "fingers" that can be extended vertically and horizontally to measure the clearance between

fixed points on the vehicle, and structures, such as bridges, platforms or tunnels. A small pantograph on the roof of the observer's cabin is coupled with a pointer that works in conjunction with a calibrated scale inside the cabin. This enables a constant check to be made on the height of the feeder wires in the electrified area.

## GERMANY

### Summer railway timetable

The summer timetable of the German Federal Railways is now available from the German Tourist Information Bureau, 61, Conduit Street, London, W.1. It contains a timetable code in English, an index showing the car-sleeper trains which operate in Germany from May 28 to September 30, 1961, all main internal and international train connections, and a complete index of through coaches, classes available, and dining-car services.

## PUBLICATIONS RECEIVED

*Party outings by rail, road, and steamer.* A free illustrated booklet entitled "Party Outings, 1961," issued by the London Midland Region of British Railways contains over 60 ideas for party outings by rail, road, and steamer. There are 29 illustrations and information about places of interest in London, Chester and York. The publication may be obtained from stations, offices, and Agents, or from the local District Passenger or Commercial Manager.

*Diesel Fuel Injection Stockists.* A comprehensive list of items of diesel fuel injection equipment is issued in the form of a booklet by the Bifold Co. Ltd., of 16, Wiend, Wigan. Parts stocked by this company include those of well-known manufacturers, such as C.A.V., Bryce, and Simms. Separate pricelists are available.

*The English Electric Journal, March, 1961.* In view of the wide interest currently being displayed in a.c. traction, a large proportion of the March issue of this well-produced journal is devoted to the subject. There are six authoritative articles on English Electric Developments in 50-cycle traction. An "Introductory Survey," by H. B. Calverley, Assistant Chief Engineer (Development), Traction Department, considers, among other subjects, that of low-voltage versus high-voltage control. "The first 50-cycle railway in Britain," is jointly described by W. H. Stowellake, and D. G. Ousey, of the Traction Development, and Traction Outside Departments respectively. "Locomotives for British Railways" is the title of the section contributed by W. G. Jowett, Chief Engineer, Traction Department,

and S. C. Lyon, Chief Design Engineer, Rolling Stock Design Department. "Multiple-unit train equipments for British Railways" are described by H. B. Calverley and E. Williams, Traction Control Design Department. "The first 50-cycle equipment with notchless acceleration," is written by Mr. E. A. K. Jarvis, Traction Development Department, and Mr. G. W. Graham, of the same department is responsible for an article on "The latest locomotive, using transducer control." The series of articles, which are well illustrated, form a valuable survey of the developments concerned.

*Rigiflex with Lubrithene/A.* A leaflet issued by Expandite Limited, of Chase Road, London, N.W.10, describes a method of preventing cracks in black-top road surfaces being produced by joints or cracks in the concrete foundation. The method consists of applying a strip of aluminium foil enclosed in a plastic film over the joint or crack in the concrete, and covering it with the surfacing material. Instructions for the application of the method both for repairing cracked surfaces and for laying new surfaces are given.

*Dry Bearings & Materials.* The second edition of this designers' handbook deals with dry bearings and materials supplied from stock by the Glacier Metal Co. Ltd. Particulars of the materials, data on their application, fabrication and installation are given. Glacier DU is a prefinished composite strip, for formation into bushes, thermal elements, slides, and so on. Glacier DQ is available as bar, tube and mouldings, for machining into bear-

ing and sliding elements of all kinds. Glacier DG/DL are surface treatments, applicable to ferrous metals to impart wear-resistant low-friction bearing properties. The handbook contains much information of value to those requiring bearings operable without the need of regular lubrication.

*Die Steels.* Produced by Hadfields Limited, of East Hecla Works, Sheffield, 9, this publication (No. 550) is concerned with the various types of steels suitable for steel dies. Its main purpose is to indicate the various factors affecting the selection of die steel, such as operational temperature, hardness, shock conditions, size and geometry of the component, and the existence of abnormal circumstances. Details are given of the many types of steel involved, including typical analysis and type of heat treatment.

*Evertaut seating.* A brochure illustrated in colour and monochrome describes metal and wooden chairs for draughtsmen, factory, and office workers, and others, also tables, manufactured by Evertaut Seating Limited of Cross Street, Darwen, Lancs., and Kern House, Kingsway, London, W.C.2. Specifications are given of each product, with notes on special features.

*British Railways camping coaches.* A folder obtainable from British Railways stations and inquiry offices includes a sketch map showing the sites of camping coaches inland and on the coasts of Great Britain. A list gives details of sites, including those of Pullman coaches, number of berths, and addresses to which applications should be made.



## Kofler system of automatic train control

Used satisfactorily on Continental railways, this system is claimed to provide absolute reliability with the minimum need for inspection

ABSOLUTE reliability in all conditions, the essential feature of an automatic train control system, has not always proved attainable by mechanical methods, nor for that matter by electrical means. The main difficulty with mechanical systems has been the problem of designing and producing equipment capable of standing

up to shocks resulting from high speeds.

It is claimed for the Kofler system that the detail design has made control by a tripping mechanism actuating the brake equipment a practical proposition and one free from the need for constant inspection. This form of A.T.C. was used prewar on sections of main lines in

Germany, Italy and Poland. It is reported to have proved completely satisfactory, experience having shown but minor alterations to be necessary to the original layout. As first designed, the tripping mechanism was located to operate a contact on top of the cab, but a later modification enables the contact position to be at footplate or axle level, an advantage when the loading gauge offers little clearance.

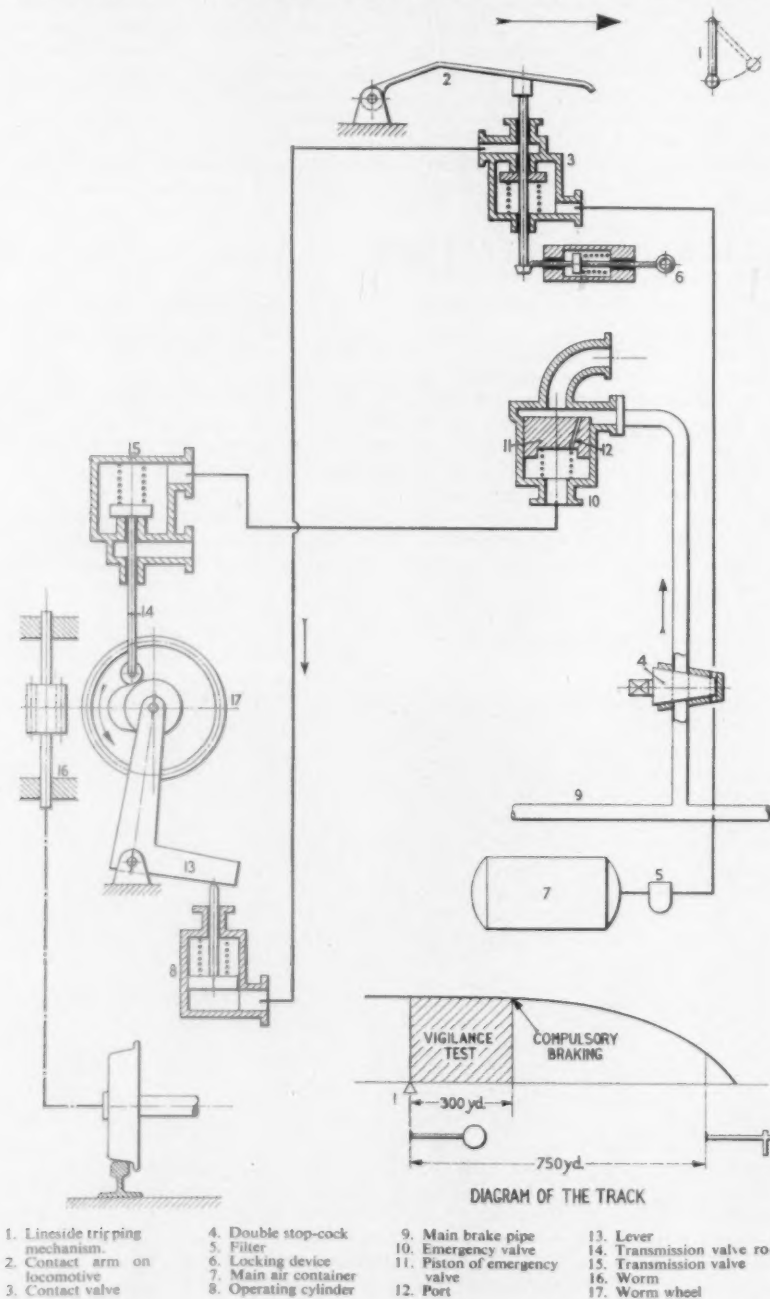
Reference to the diagram shows the lineside tripping mechanism (1) which engages the contact arm (2) on the locomotive, whenever the signal is in the "on" position. Depression of the arm opens the contact valve (3), which is then retained in the open position by the locking bolt (6), after contact between the arm and the trip ceases. Opening the contact valve allows compressed air from the container (7) to flow through the filter (5), the double stop-cock (4), and the locked contact valve to the operating cylinder (8). The piston in this cylinder then moves the lever (13), bringing the worm-wheel (17) in engagement with the axle-driven worm (16). Rotation of the worm causes the eccentric attached to it to rotate and to lift the rod (14), opening the transmission valve (15), after what is termed the vigilance period has elapsed. It will be seen that the vigilance period is a function of distance, 300 yd. in the example shown.

### Automatic braking

Normally in the time taken to cover this distance, the driver would acknowledge the receipt of the warning by bringing the train under control and re-setting the mechanism. Should this not be done the transmission valve will have opened, releasing compressed air from below the piston (11) in the emergency valve (10). As air will be discharged from the lower side of the piston at a greater rate than it can flow through the port (12) the differential causes the valve to move down and admit full air pressure to the braking system.

Re-setting the mechanism is done by withdrawing the plunger of the locking device and sounding the whistle, the steam supply of which is connected with the contact valve. The resultant closing of the contact valve releases the pressure in the operating cylinder, disengages the wormwheel, and returns the position of the eccentric to normal.

While the example described relates to a compressed-air braking system the



Continued on page 368





General view, showing (left) shutter doors leading to rail-road loading platform and (right): sliding doors to quayside

## Improved freight-handling facilities at Southampton

### New cargo transit shed at Empress Dock

SOUTHAMPTON'S freight-handling potential has been enhanced by the addition of a spacious single-storey cargo shed at berths 26-27. The accommodation, which occupies nearly the whole length of the northern face of the Empress Dock, was used for the first time when the cargo ship *Bukken* called early in March to discharge fruit from the Mediterranean, a traffic for which the shed is ideally suited.

The building, which replaces two separate sheds formerly on this site, is 725 ft. long and 95 ft. deep. It is of steel-portal frame construction, with panelled brickwork, supported on concrete shell piles. The absence of intermediate stanchions gives a completely clear working space for the whole of the floor area.

#### Ready access

Access to and from the quay is by 12 large doorways, 18 ft. high and 23 ft. wide; each has a pair of sliding doors. On the landward side 26 galvanised-steel roller-shutter doors give access to the combined rail-and-road loading platform. The latter is outside the shed as opposed to the usual type of inside gullet platform, and extends the length of the building. The platform can be used by rail or road transport as the rail track is flush with the road surface. Protection from

weather is given by an overhead canopy.

There are four railway tracks serving the quay and shed: two on the quayside, one immediately inside the shed, and one serving the loading platform. Access to the shed at each end is by two large steel roller-shutter doors.

The berth is served by five electric level-luffing cranes, all of 65 ft. radius.

Inside the shed, lighting is by 150 standard 8 ft. industrial fluorescent fittings which follow the roof framework.

Lighting on the quayside is by 5 ft. reflector fluorescent tubes mounted in fibreglass fittings at 24-ft. centres recessed into the under side of the coping along the south wall; on the rail-road loading platform similar tubes are mounted on the face of the wall.

This is the first time that fluorescent lighting has been used to illuminate a cargo shed in the docks, and the whole lighting scheme was designed by the Electrical Department of the Chief Docks Engineer at Southampton. Good natural lighting within the shed is given by fibreglass glazing in the roof.

The work was executed, under the supervision of Mr. J. H. Jellett, Chief Docks Engineer, by the following contractors:—

Foundations ...	...	Trollope & Colls Limited
Steelwork ...	...	Dawnays Limited
General building ...	...	A. Monk & Co. Ltd.

## Refreshment facilities at Belfast

THE Ulster Transport Authority has provided a new general waiting-room and combined snack bar, with separate refreshment room, at Great Victoria Street Station. The work is part of a scheme for the ultimate development of the station as a combined rail, road and air terminal.

The general waiting room has entrances from Great Victoria Street and from the station concourse area; the snack bar forms part of the waiting-room.

The premises are spacious and cheerful. Floor covering consists of plastic tiles, and steel-frame tables and chairs have been provided in a variety of colours.

### New waiting-room, snack bar, and refreshment room at Gt. Victoria Street Station

Metal-frame tables, upholstered chairs, and bar stools supplement banquetette seats, finished in red and beige.

A low-ceiling illusion has been achieved in the bar by a false ceiling of plastic-covered white wires. Walls and ceiling above the wires are in dark blue.

The structure was designed, and all work carried out by the Ulster Transport Authority with its own staff.

## Re-signalling of London Transport lines at Barking

Segregation of London Transport and British Railways lines provides quick interchange facilities

BARKING STATION is used by both the Eastern Region (London, Tilbury & Southend Section) and London Transport. It is the centre of a very complex layout, and until its recent modernisation all crossings were on the level. A diagram of the old and new layouts was published in our March 21, 1958, issue.

The extensive freight service from the St. Pancras lines used to cross both the London Transport Upminster line and the Fenchurch Street-Southend line on the level at the east end of Barking Station. It is now carried over both lines by a fly-over to the west of Barking Station. Similarly, the London Transport lines had their platforms at Barking between those serving the St. Pancras lines on the north side and the Fenchurch Street lines on the south side.

### Quick interchange facilities

Under the new scheme, the west-bound London Transport line now burrows under the Fenchurch Street-Southend lines at the east end of the station and re-crosses them by a fly-over at the west end. In this way quick interchange facilities are now provided between London Transport trains and Southend trains running in the same direction.

As the diagram shows, east-bound through London Transport trains use Platform 2. Ignoring for the moment the short bay Platform 3, Eastern Region trains to Southend use Platform 4,

which with Platform 2 forms an island platform. In the Up or west-bound direction there is again an island platform, of which the inner face, No. 5, is used by Up Southend trains to Fenchurch Street, and the outer face, No. 6, by west-bound London Transport trains. Thus passengers wishing to change have to walk only from one side of the platform to the other.

### Scope of complete scheme

The complete modernisation scheme, authorised five years ago, covers the whole of the London Transport territory from Campbell Road Junction right through to Upminster. London Transport lines are now completely separate from those of the Eastern Region and all previous cross-connections, with two minor exceptions, have been abolished.

This separation has enabled each line to be re-signalled separately. The new London Transport signalling is already in operation. The Eastern Region new signalling will be described in a future issue. The new Barking signalbox is at the west end of Barking Station on the north side. It contains both the London Transport and Eastern Region installations. These are separate. Each has its own operating room, its own relay room, and its own ancillary equipment.

The London Transport signalbox controls a territory beginning at Bromley (inclusive) to the west and ending at

Dagenham East (again inclusive) to the east. At Bromley Station there is a trailing cross-over between east-bound and west-bound tracks, for use if trains have to be reversed there. There is a bay at Plaistow with a facing connection off the east-bound track, and also a cross-over between the two main tracks, giving trains from the bay access to the west-bound track. East Ham Station, as Bromley, has one cross-over.

Proceeding eastwards from Barking on the London Transport lines, one comes first to a nest of nine carriage sidings. These lie between the two main tracks, with direct access to both tracks at each end. The details are shown in the diagram. These sidings lie some 500 yd. east of the station, because the west-bound line has to burrow under the Southend lines. Therefore, east-bound trains from the station first enter a reception road, which gives a train a berth of 1,134 ft.

The Barking signalbox controls the signals and connections at Dagenham East. Here, as at Plaistow, there is a bay with a facing connection on the east-bound side, and a cross-over between the two main tracks available for trains leaving the bay for the west-bound track.

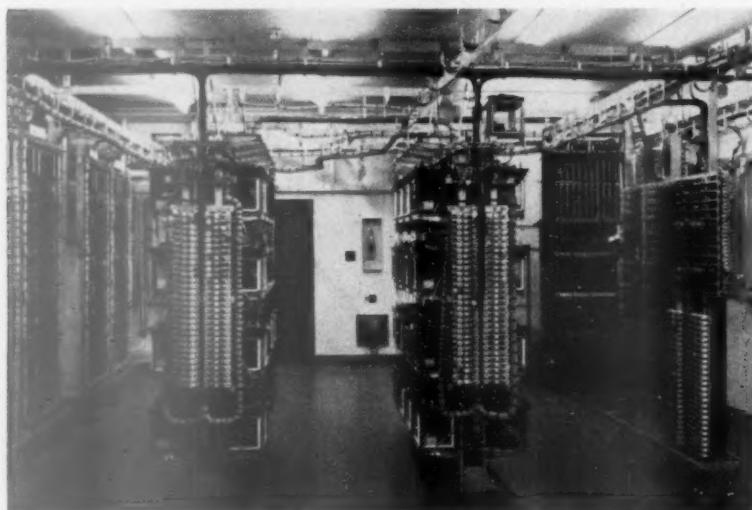
### Designed for heavy traffic conditions

West of Barking the signalling has been designed to cope with 40 trains an hour in each direction, and east of Barking with 30 trains. At the peak periods 22 trains an hour are run west of Barking, and 17 trains east. The remaining five trains reverse at Barking, either using the bay Platform 3 or proceeding into Barking carriage sidings.

All running and shunt signals at Barking are of the standard London Transport type, and each signal carries a plate showing its number. At Barking the points and signals are controlled through seven localised interlocking machines. These are situated as follows:—

Location	Prefix
Bromley ... ..	FB
Plaistow ... ..	FC
East Ham ... ..	FE
Barking Station ... ..	FF
Barking Carriage Sidings West	
" " " East	FG
Dagenham East ... ..	

These prefixes are shown on the plates attached to the signals. The diagram is confined to the territory controlled



Control room in Barking signalbox

through the three FF interlocking machines, but the prefix FF is omitted from the signal numbers shown on the diagram.

Once a train has passed over facing points, it is necessary for the signalman to know as soon as possible when it has cleared them. Therefore the normal track circuits are reinforced by special high-frequency 10,000-cycle rail circuits. These are normally de-energised track circuits which are completed by the wheels and axles of the train. They are denoted by the Greek letter delta ( $\Delta$ ) on the diagram. Each such rail circuit is located just far enough in advance of the points which it protects to ensure that the longest train in use has cleared them. It operates so as to release the points as soon as the first wheels of the train reach it.

#### Consecutive "home" signals

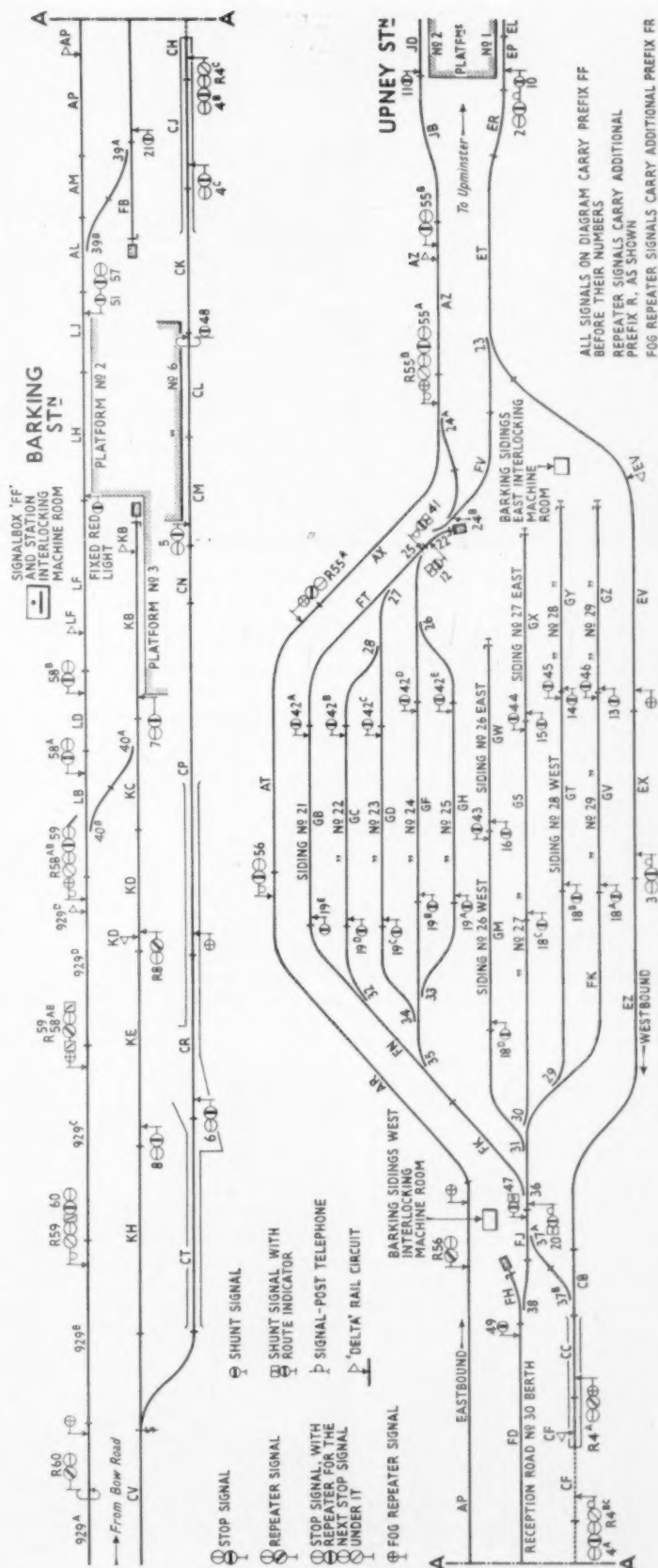
In accordance with London Transport practice, several consecutive "home" signals are installed in the rear of each platform. Their object is to keep trains moving slowly and within the limits of safety, and so minimise the delay inevitably caused to following trains, while a train is stopping at a station. These signals are grouped on the control panel, so that they are operated by one push-button. An example is found in signals 4A, 4B and 4C.

For the points, the London Transport standard electro-pneumatic chairlock point layout is used. This includes an electro-pneumatic track-lock for facing passenger train movements. Essentially the chairlock point layout comprises two hook-type locks, one mounted in each of the two locking slide chairs and arranged to lock the switch to its appropriate stock rail, respectively, according to the position of the switches. The electro-pneumatic track lock locks the hook lock in the engaged position, so that the hook lock cannot be unlocked unless the track lock is released.

#### Plan of accommodation

Compressed air is supplied initially at 120 lb. p.s.i., but it is then reduced to 70 lb. p.s.i. This intermediate reduction extracts any water which may be present.

The operating room at Barking signal-box is on the first floor; the ground floor contains the Barking Station interlocking machine room, and also a room for automatic telecommunications apparatus. In the operating room the signalmen face the tracks. The illuminated diagram is in front of the signalmen, but well behind the consoles. It shows track occupation and signal aspects (red or green). Normally every track is illuminated on the diagram by a continuous strip of light, but when a track-circuit is occupied, the light for that section is extinguished. This is normal London Transport practice.



Diagrammatic representation of the new layout at and around Barking Station. Note that direct access to the two main tracks is obtainable from the nine carriage sidings which are contained within their compass





*Interlocking machine room in Barking signalbox*

Immediately below the diagram, the train describer annunciator panel is mounted. This extends for the whole length of the diagram and in effect is divided into three horizontal strips. The upper strip gives west-bound train descriptions, the middle strip gives miscellaneous indications, including those showing the position of all the points, and the lower strip gives east-bound train descriptions.

#### **Easily-read descriptions**

Train descriptions are shown on stencils corresponding to Bromley, Plais-tow, East Ham, Barking Station, Barking carriage sidings, Upney and Dagenham East. Two-letter indications are used, and these are given in edge-lit Perspex type, which makes them very clear-cut and easy to read. Descriptions automatically move forward with the passage of the trains, and the Barking signalmen are able to interpose or cancel trains if necessary.

The illuminated diagram is mounted on an aluminium perforated sheet. This simplifies replacing lights and making other adjustments.

There are two consoles at Barking. The main console controls all routes and is continuously manned. The second console controls only the west-bound route, exclusive of Bromley. Normally, it is manned only during the peak hours when the traffic is more than a single signalman can handle conveniently.

Controls are operated by Perspex push-buttons on the consoles. These buttons are grouped according to territory; that is, all the buttons working to a particular interlocking machine (for example, FG) are together. The Barking (FF) buttons, which are in most

use, are at the bottom of the console and so nearest the signalman. Those for the outlying territories are along the top of the console.

Route-setting by pre-selection is the system in use. Normally, when the signal is at danger, the relevant push-button glows red. To pre-select a route, the signalman presses the button. The button is self-restoring and does not stay down. When it comes up again it glows yellow, to show that the route has been pre-selected. When the route has been set up and the signal has cleared, the button glows green. When the signal returns to red behind the train, the button glows red again. All points are automatically restored to normal as soon as the train has passed them.

When a signal is controlled by several buttons, if one button is showing yellow or green, the red glow on the other buttons is extinguished. To cancel a route, the signalman pulls up the button. The route is then restored, subject to any approach - locking.

#### **Widespread two-way communication**

The telephone concentrator is by the signalman's side. It has connections to other signalboxes, to the various stations and to the Traffic Controller. It is also connected to the main London Transport automatic telephone exchange. In this case the signalman dials the wanted number. A separate switchboard is provided for signal-post telephones.

On the wall behind the signalman there is another switchboard. At the top there is a series of switches for making normally controlled signals work automatically. During the quieter periods of the day the outlying connections, especially from Bromley to Barking,

as a rule, are not used. Therefore, the signals governing do not need to be operated from Barking, and so are switched to work automatically.

Below these switches the board contains such time releases as are needed. These are sealed up, and the seal can be broken, and the time release used only under stringent precautions. Finally, at the bottom of the board there are keys for communicating with linemen at work at any point throughout the territory. When one of these keys is used, a whistle sounds at the lineside. When the lineman hears it, he goes to the nearest telephone and speaks to the signalbox.

#### **Interlocking circuits**

From the signalbox control and indication circuits pass to the various interlocking machine rooms. These circuits are of the "non-safety" type, and operate sealed telephone-type relays. Glass-braided wire .028 in dia. in single 19- or 37-core cables is used for connecting these "non-safety" signalling circuits.

Each interlocking machine room contains the local interlocking machine, together with the attendant relays and power supply gear. It is a compact brick hut, thoroughly fire-proof. Normally it is unattended, but there are facilities for any work a lineman may have to do.

The local interlocking machine is simple and robust, designed so that any maintenance work can be done with one or two tools. For each signal or set of points there is a single vertical shaft, rotating through 60 deg. between normal and reverse. They are actuated pneumatically by the "non-safety" relays.

#### **Mechanical interlocking as final protection**

There is mechanical interlocking between them, but this is a final precaution, because unless a shaft is free to rotate, air cannot be fed to its controls. Each shaft has an electric back-lock, which looks after the relevant approach-locking and back-locking; these are controlled by the appropriate track-circuits. Each shaft also carries the appropriate contacts, which through the necessary track-circuit and point-detection relays carry the current to the relevant points and signals.

Each shaft carries a protruding handle for testing purposes. In the event of a failure, the lineman can tell from its position whether the failure has occurred on the "non-safety" side between the control panel and the interlocking machine, or on the "safety" side onwards from the machine to the points and signals.

From the interlocking machine, the circuits, which are now "safety circuits," are led first to the track relays and point detection relays concerned. These are



also in the interlocking machine room. They then proceed to the points, signals and trainstops themselves. Generally the signalling and point circuits are cabled externally, with 660V. grade lead-covered three-screened cored cable. Each screened core consists of a central conductor of 0.064 in. dia. tinned copper wire, P.V.C. insulated with an outer braided copper screen which is used as the return conductor. The cable is made in a three-screen formation with rubber filling, taped and lead sheathed.

#### Insulation

Multi-core screened cable with a protective neoprene outer casing is used to connect the point or trainstop apparatus on the track and terminal boxes on the cable run. The cable is laid on the ground beneath the track.

Each conductor, of 0.064 in. dia. tinned copper wire, is covered with a concentric neoprene insulation and a continuous screening of tinned copper braided wire. Ten of these screened conductors are formed on a flexible core and provided with a longitudinal ribbed tough neoprene sheath.

Some signalling control circuits are cabled with 1-core or 2-core rubber compound or P.V.C. insulated lead-sheathed cable of 660V. grade. This is for convenience and economy.

For the signalling main supply, separate a.c. cables are installed. These consist of a 19/0.064 2-core with a rubber compound insulation, an outer lead sheath and steel wire armouring, and a similarly formed cable with 7/0.064 conductors.

Remote control supervisory facilities use either 61, 127 or 217 multi-core cable, which is P.V.C. insulated, metal-screened and finally covered with a P.V.C. outer sheathing. Each conductor is of 0.01 in. dia.; they are formed in layers, with the outer layer covered with a copper tape. These screened conductors are then taped before being covered with an outer P.V.C. sheath.

#### Special precautions

Internal signalling control circuits are wired in single strand 0.052 in. dia. tinned standard annealed-copper-insulated with fire-resisting neoprene for 250V. working. The neoprene has an outer covering of electrical quality low-alkali glass yarn.

Where main cables have to cross tracks, they are carried overhead on cable bridges.

Precautions are necessary in view of the electrification of the tracks. London Transport trains operate on 600V. d.c., but the impending Southern Region electrification is based on 25 kV. and 6.25 kV. 50 cycles a.c. These precautions are as follow:—

(a) Separate supply mains have been provided throughout the line—one 600V.

33½ cycles for general purposes and the other 440V., 33½ cycles for feeding track circuits. These separate supply mains are fed from separate alternators driven by a common motor in the substations. The risk of 50-cycle leakage currents being fed back into the signal mains and thus reaching both the track and local windings of a track relay is thus eliminated.

(b) All signalling relays are of the a.c. two-element type with one winding connected to a local source of current and the other winding fed from the main cable.

(c) The track circuits are of the normal condenser-feed type operating at 33½ cycles. A tuned filter unit designed to reject 50-cycle current has been connected in series with the track winding of each track relay. The filter incorporates a disc of Metrosil, a material whose conductance increases as the voltage across it rises. The building-up of excessive voltages across the condenser which forms part of the tuned filter is thus prevented.

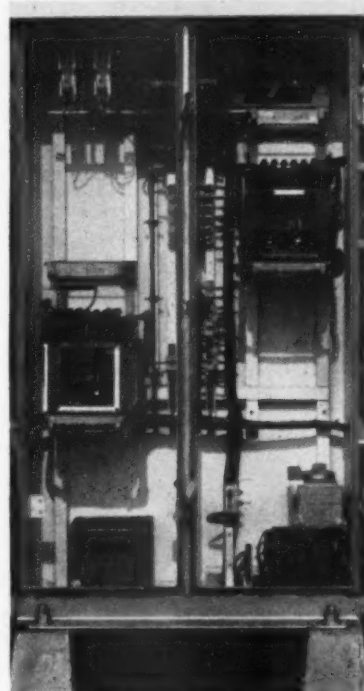
(d) Long cables such as the telephone cable and the control cable between Barking and the signal cabins controlled from Barking, are provided with double-wire armouring to provide a screen against induced 50-cycle current.

(e) The use of single-core cable has been avoided. All cabled circuits include both a feed and return wire.

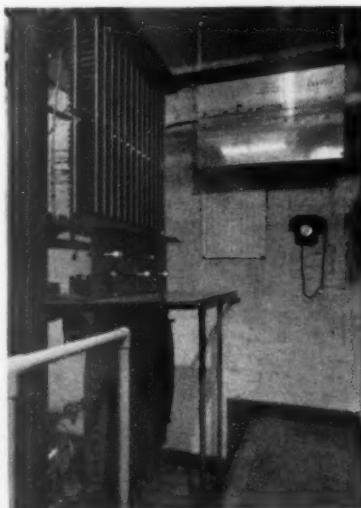
Electricity and compressed air are provided by the London Transport substations under the control of the Chief Electrical Engineer. The air supply is cooled and dried to prevent the freezing of the point and signal apparatus.

The main items of signalling equipment, such as signals, point layouts, relays, etc., were supplied by the Westinghouse Brake & Signal Co. Ltd. The signalling lead sheathed and neoprene cable was supplied by the B.I.C.C.

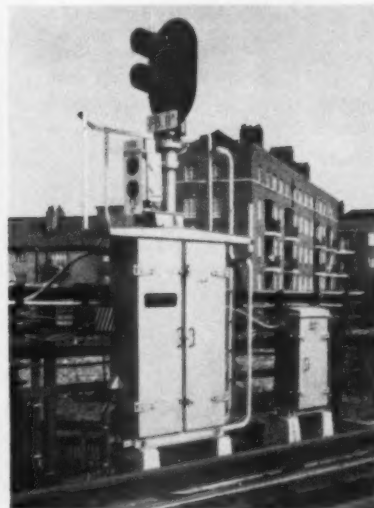
Limited. The 0.010-in. control cable was supplied by the General Cable Manufacturing Co. Ltd. The General Electric Co. Ltd. supplied the specially designed main telephone cable, which runs through the Upminster line. Bernard Collins Limited supplied most of the signal location cases and W. R. Sykes Interlocking Signal Co. Ltd. supplied transformer and rectifier sets. All items of equipment, apparatus and cabling were purchased to the London Transport Executive Signal Engineer's specification and design.



Internal view of signal location case, Upminster line



Interlocking machine at Bromley



Signal location case on Upminster line

## The new pattern of the Western Australian Government Railways

### Replacement of 3-ft. 6-in. by 4-ft. 8½-in. gauge track

DETAILS have recently been released of the proposed conversion of the W.A.G.R. main line between Kalgoorlie and Perth and Fremantle. In general, this will be a straightforward conversion, with transshipment at junctions with 3-ft. 6-in. gauge branch lines. To cater for and connect the two long branches in the Kalgoorlie area—to Leonora from Kalgoorlie and to Esperance from Coolgardie—the existing 3-ft. 6-in. gauge track between Kalgoorlie and Coolgardie will be retained despite and as well as the new 4-ft. 8½-in. gauge track.

#### New branch line

From Southern Cross a new 4-ft. 8½-in. gauge branch will be constructed to serve

the iron-ore deposits at Koolyanobbing, 33 miles distant.

The most important exception to the generalisation in the first paragraph will comprise a new route between East Northam and Midland Junction in the metropolitan area.

The present line connecting these points has a ruling gradient of 1 in 40. By constructing a line through Toodyay and the Avon Valley, a 1-in-200 through main line can be secured. The proposed route would be of both 4-ft. 8½-in. and 3-ft. 6-in. gauge, and its construction will permit the dismantling of both the existing 3-ft. 6-in. gauge Northam-Midland Junction *via* Clackline and the Clackline-Toodyay lines. The Great

Southern line from Albany to Spencer's Brook Junction, on the existing Northam-Midland Junction section, will be extended to a new marshalling yard at East Northam. From Midland Junction, the 4-ft. 8½-in. line to Perth will be built alongside the existing 3-ft. 6-in. line, with extensions to Fremantle and Kwinana.

#### Iron-ore traffic to Kwinana

Two other standard (4-ft. 8½-in.) gauge connections in the metropolitan area are proposed, (1) from Midland Junction *via* a marshalling yard at Kewdale to Kwinana, and (2) Perth to Kewdale *via* Carlisle. The former of these two connections will enable iron ore to be carried from the Koolyanobbing mine directly to Kwinana, avoiding Perth and Fremantle, in 3,000-ton standard-gauge trains. This expected traffic is likely to be between one million and two million tons annually.

## Pre-apprenticeship in the North Eastern Region

PLANNED for control by the Carriage & Wagon Works Manager of the North Eastern Region of British Railways, a pre-apprentice training school is to be built at Poppleton Road in York. It will accommodate 60 boys on an intake basis of 20 students at four-monthly intervals timed to coincide with normal school-leaving periods.

Principal aims will be to introduce boys to new conditions and the necessity for adaptation; to give systematic training in manual skill; to find natural aptitude and so ensure suitable eventual placing, and to widen general knowledge.

#### Scope of tuition

Basic workshop experience and theoretical knowledge will be taught. Practical work will be carried out in a large and well-equipped workshop under railway instructors; theoretical work will in the main be given by lecturers provided in association with the Local Education Authority, association with which will prove useful later on, when technical courses are selected.

Two wings will accommodate a workshop and stores block and a two-storey teaching and amenity building. These will be linked by an administrative unit containing staff accommodation. The workshop will cover the following activities: fitting and smithing; machinery and electrical work; plate and sheet-metal work and welding; woodworking,

### New school scheduled for completion by 1962 will provide practical link between school and occupational experience

painting, polishing, and trimming. The teaching wing will contain a classroom, science laboratory, and drawing office.

The kitchen will serve light refreshments only—boys will be encouraged to use the Works canteen and so meet the men with whom they will later work.

Both wings will be of concrete frame construction with concrete columns on a modular planning grid. The teaching block will have pre-fabricated floor and roof-beams supported on edge-beams. The 60-ft. span of the workshop will have a concrete conoid roof with a north light. The gable walls will be brick, with contrasting brick-infill panels to the main façades.

#### Interior finish

The load-bearing cross walls of the administrative block will be highlighted by hardwood framing with coloured plastic panels. Internal walls generally will be plastered and painted, and there will be ceramic tiles on one wall of the entrance hall and vinyl tiles in the toilet and cloakroom. Reconstructed marble tiles will pave the entrance hall, which will have a reinforced-concrete open stairway with hardwood treads. Floors

in the main circulation area will be Vinyl-tiled, and there will be Vinyl sheets in the teaching rooms.

Acoustic ceiling treatment will be given to the teaching and circulating areas. Provision has been made for the addition of another storey over the teaching wing and administrative block.

The building was designed in the Architect's section of the Chief Civil Engineer's Department of the North Eastern Region, and Concrete Services Limited of York will erect the concrete framework.

#### Kofler system of automatic train control

*Concluded from page 362*

device is equally applicable to vacuum-operated brakes. The diagram shows an overall operating distance of 750 yd., including a vigilance period of 300 yd. These measurements may be varied to give distances suited to particular conditions of track, train weight, and speed. As announced in our issue of November 4 last, the manufacturing rights for this locomotive equipment are held by Gresham & Craven Limited.

# PERSONAL

## Overseas

MR. J. P. LAURENS, M.INST.T., Assistant General Manager (Finance & Planning), South African Railways, who has been appointed Deputy General Manager, was born in Klerksdorp in the Transvaal, in 1902. He joined the South African Railways at Klerksdorp in February, 1918. After some years at various stations, he was transferred to the General Manager's Staff Office in 1931. In 1938 he was appointed to the office of the Minister of Railways & Harbours in Pretoria. He then served for a short time in the office of the General Manager, Johannesburg, and in 1941 was transferred to the office of the Railways & Harbours Board in Pretoria. Soon afterwards, he was appointed Administrative Secretary to the Minister. Three years later, he became Chief Superintendent (Parliamentary) at Headquarters, and set in motion



Mr. J. P. Laurens

the plans for the resumption of civilian air services by the South African Airways. In 1945, he became System Manager, Port Elizabeth, but returned to Headquarters a few months later as Chief Superintendent (Staff), a post he held until 1954, when he became System Manager (Western Transvaal) with Headquarters at Johannesburg. Later in 1954 Mr. Laurens was selected to head the department of Research, Planning and Development, a designation that was subsequently changed to Assistant General Manager (Finance and Planning).

MR. J. A. KRUGER, M.INST.T., Assistant General Manager (Staff), who has been appointed Deputy General Manager, joined the railway service in 1930 at Pretoria as a Transportation Pupil. He became Chief Clerk (Operating), Johannesburg, in 1946; Assistant Superintendent (Operating Re-



Mr. J. A. Kruger

search) in 1947; Superintendent (Operating) in 1950, and Superintendent (Operating, Research & Investigation) in 1951. The following year he was appointed Administrative Secretary in the office of the Minister of Transport, Pretoria. In 1953 he returned to Johannesburg as Chief Superintendent (Operating), and in 1955 was appointed Assistant General Manager (Operating). Mr. Kruger was appointed Assistant General Manager (Staff), in 1960.

MR. R. H. BOTHA, System Manager, Witwatersrand, Johannesburg, South African Railways, who has been appointed Assistant General Manager (Staff), was born in 1913



Mr. R. H. Botha

and joined the railway service at Kroonstad in 1934. After a period as Secretary of the Railways and Harbours Board, Pretoria, Mr. Botha became Administrative Secretary to the Minister of Transport in 1953, and was later transferred to Head Office as Chief Superintendent (Parliamentary). In 1955 he became Chief Superintendent (Staff) at Railway Headquarters, and in 1960 he was appointed System Manager, Western Transvaal at Johannesburg.

MR. W. E. PURVIS, B.A., LL.B., M.INST.T., Chief Superintendent, Financial, South African Railways, who has been appointed Financial Manager, was born in 1906 and joined the railway service as a clerk at Durban in 1925. He served in Natal for a number of years before he went to Headquarters in 1933. In 1938, while he was still at Railway Headquarters, he obtained the B.A. degree, and subsequently the LL.B.



Mr. W. E. Purvis

He became Secretary to the Railway Board in 1941, Administrative Secretary to the Minister of Transport in 1944, and Chief Superintendent (Parliamentary) in 1945. Since 1947, when he became understudy to the Chief Financial Manager at Headquarters, Mr. Purvis has been attached to the financial section. He became Chief Superintendent, Financial, in 1951.

MR. C. REZELMAN, System Manager, Durban, South African Railways, who has been appointed to the newly created position of Head, Planning & Productivity, joined the S.A.R. in 1924. In 1943, after service in various parts of the Union, he was appointed to the General Manager's Staff Section at Railway Headquarters, Johannesburg. He became Secretary of the Railway Board in 1947 and Administrative Secretary to the Minister of Transport later in the same





Mr. C. Rezelman

year. He was appointed Superintendent (Works) in the General Manager's Office, Johannesburg, in 1951, and a Relieving System Manager in 1953. He became System Manager, Port Elizabeth, two years later, and System Manager, Durban in 1957.

MR. HARRY ARKLE, European General Manager, Canadian Pacific Railway, who, as recorded in our March 24 issue, has been appointed a Director of the company, and also appointed to the new position of Managing Director, Europe, was born in Gateshead-on-Tyne. He joined the C.P.R. in Winnipeg as a junior clerk in 1912. During the 1914-18 war he served in France with the Canadian Expeditionary Force, returning to the company's freight office in Winnipeg in 1919. Most of his career has been spent in Winnipeg where he won steady promotion. He became Freight Traffic Manager for the Prairie and Pacific regions in 1943, still in Winnipeg. In 1953, he moved to the company's headquarters in Montreal as Freight Traffic Manager with jurisdiction over all



Mr. H. Arkle

the company's lines in Canada and the United States. Mr. Arkle was appointed European General Manager in 1954.

MR. H. W. G. HIGNETT and MR. J. M. DHAVERNAS have been appointed directors of the International Nickel Company (Mond) Limited. Mr. Hignett remains managing director of Henry Wiggin and Co. Ltd.

MR. K. NEWCOMBE, formerly Joint General Manager, has been appointed a Director of Sir John Jackson Limited, civil engineering contractors, London.

MR. ANAND MOHAN, Director (Efficiency Bureau), Railway Board, Indian Government Administration, has been appointed Senior Deputy General Manager, Northern Railway of India.

## Industrial

MR. V. J. ROSS, formerly Sales Manager for Scotland, Scottish Cables Limited, has been appointed Assistant Regional Manager, Scotland, British Insulated Callender's Cables Limited.

MR. H. O'NEIL has been appointed Advertising Manager, Pressed Steel Co. Ltd., and MR. D. FAIRBAIRN has been appointed Export Advertising Manager.

MR. J. CARLE has been appointed Managing Director, George Richards & Co. Ltd., one of the machine tool companies in the Staveley Industries Limited group.

MR. W. C. M. MATTERSON, Managing Director of Matterson Limited, has retired. He is succeeded by his son, MR. R. K. MATTERSON, who has been Joint Managing Director since 1957. Mr. Matterson founded the company in 1919.

MR. H. J. PENN has been appointed Chairman of Murex Limited and Murex Welding Processes Limited. MR. F. W. TOMLINSON has become Deputy Chairman of both companies. MR. H. C. GREEN has been appointed Managing Director of Murex Limited, and MR. J. M. WILLEY, Managing Director of Murex Welding Processes Limited.

Coventry Compressors Limited has announced that MR. T. K. JENKINS has been appointed as Manager of its Diamond Drilling Division. Mr. Jenkins was formerly with Holemasters Limited, of Basingstoke, Hampshire.

SIR JULIAN PODE has been appointed Chairman, South Wales Committee of Lloyds Bank, following the retirement of MR. E. WHITLEY-JONES. Sir Julian Pode has been a member of the committee since 1959. He is Managing Director of the Steel Company of Wales, and Deputy Chairman of the Development Corporation for Wales.

MR. F. TUTEIN, Overseas Technical & Sales Manager, Siemens & Halske A.G., of Brunswick, Germany, who, as recorded in our March 17 issue, has retired, was trained in the Technical High School at Karlsruhe. He was in South America for eight years before joining Vereinigte Eisenbahn-Signalwerke, a member of the Siemens group. 1931-36 he represented the company in



Mr. F. Tutein

India and South Africa, returning to Berlin in 1937 to become leader of the foreign section. In 1950 all signal work was concentrated at Brunswick and Mr. Tutein became head of the overseas department there. He was responsible for such contracts as the new station signalling at Berne, the c.t.c. installation on the Grangesberg-Oxelösund Railway, in Sweden, and the resignalling of the Iranian State Railways main line.

MR. H. AHLGRIMM, Deputy Overseas Technical & Sales Manager, Siemens & Halske A.G. of Brunswick, Germany, who, as recorded in our March 17 issue, has been appointed Overseas Technical & Sales Manager, joined the traction department of Siemens-Schuckertwerke in 1929. In 1931 he took up track equipment & shunting research and, in 1933, was transferred to the Vereinigte Eisenbahn Signalwerke specialising in shunting and marshalling yard equipment. Mr. Ahlgrimm went to Brunswick, in 1950, as Deputy Overseas Technical & Sales Manager.



Mr. H. Ahlgrimm



## British Transport Commission

MR. J. H. BREBNER, O.B.E., is to retire on March 31 from his post as Public Relations Adviser to the British Transport Commission. The Commission has placed on record its appreciation of his services over the past 14 years. Because of the pending changes in British Transport Commission organisation, it is not proposed at this time to appoint a successor. Mr. Brebner was appointed Chief Public Relations and Publicity Officer of the British Transport Commission in 1947. Thirty years ago he was associated with the late Sir Kingsley Wood, then Postmaster-



Mr. J. H. Brebner

General, in popularising Post Office services. For his work with the Post Office, Mr. Brebner was awarded the M.B.E. In 1937, Mr. Brebner was appointed a member of the Committee for the creation of the Ministry of Information and was designated Director of News Division, a position which he later held under seven Ministers. For these services he was awarded the O.B.E. The American Press made him an honorary life member of the Association of American Correspondents. From 1943 until the end of the war, in addition to his duties as Director of the News Division of the Ministry of Information, he was engaged on special missions, many of them overseas. In 1944 he was appointed Executive Chairman of the Anglo-American Committee, and was the first United Kingdom Press Officer in charge of press relations of the Imperial Prime Minister's Conference. For his work on behalf of the Allied press, the American Government awarded Mr. Brebner the American Medal of Freedom with Bronze Palm. In 1947 Viscount Rothermere, on behalf of the British, Empire, American and Foreign press, presented Mr. Brebner with his portrait painted by Henry Carr. At the end of the war Mr. Brebner resigned from the Civil Service and, at the invitation of the late Lord Ashfield, joined the London Passenger Transport Board as Chief Public Relations & Publicity Officer. During his service with the L.P.T.B. he was responsible for the reorganisation of its public relations, publicity and advertising services. In 1949 he was

awarded the Medaille d'Argent de Reconnaissance Francaise by the French Government for services rendered during the war, and in July, 1950, was awarded the decoration of Commander in the Order of Orange Nassau by the Queen of the Netherlands. Mr. Brebner has received the dignity of the Freedom of the City of London. He was a Member of the Executive and of the Council of the Advertising Association. In 1954, in addition to his duties as Chief Public Relations & Publicity Officer, he was appointed Public Relations Adviser to the British Transport Commission and a member of the Commission's General Staff. He is also Vice-President of British & Irish Railways Incorporated, New York.

MR. L. LLOYD, Assistant to the Line Traffic Manager (Great Northern) British Railways, Eastern Region, who has been appointed District Traffic Superintendent, Marylebone, British Railways, London Midland Region, a new position connected with the proposed Marylebone-Aylesbury diesel service, was educated at Hayarden Grammar School, and started his railway career as a clerk at Connahs Quay in 1940. From 1943 to 1947 Mr. Lloyd served with the R.A.F. and on demobilisation recommenced his railway at Buckley, near Chester. In 1949 he was appointed a Traffic Apprentice and on completion of his three years training was attached to the District Operating Superintendent's Office, Nottingham. He was appointed Assistant Yard Master, Whitemoor, in 1953, and the following year moved to the Divisional Operating Superintendent's Office, Liverpool Street, where he was engaged on productivity work. After



Mr. L. Lloyd

two years as Chief Trains Clerk and Chief Controller, Manchester, he was appointed Assistant to District Operating Superintendent, Manchester. With the reorganisation of the Eastern Region's traffic departments in 1957, Mr. Lloyd was appointed Freight Assistant to the Traffic Manager, Sheffield, and two years later took over the post of Modernisation and General Assistant to the Line Traffic Manager (Great Northern) the position which he now vacates.

## Railway Staff National Tribunal

MR. ROY M. WILSON, Q.C., who, as recorded in our issue of March 3, has accepted the Chairmanship of the Railway Staff National Tribunal, was born in 1903 and educated at Glasgow High School, Glasgow University, and Balliol College, Oxford. Mr. Wilson was called to the Bar in 1931. He served, during the war, with the Queens Own Cameron Highlanders. He took silk in 1950 and was Recorder of Faversham 1950-51. He has been Recorder of Croydon since 1957.



Photo

[Elliott & Fry]

Mr. R. M. Wilson

## Institute of Transport

MR. H. C. TREE, Joint Assistant Secretary of the Institute of Transport has retired.

## Ministry of Transport

MR. D. HOLMES has been appointed Private Secretary to the Joint Parliamentary Secretary to the Minister of Transport, MR. JOHN HAY, M.P., in succession to MR. G. S. RIDDLE.

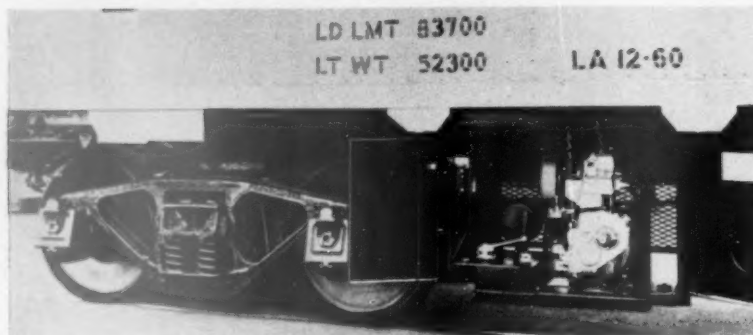
## Published Will

The will of the late MR. C. BARRINGTON who was a member of British Road Services board of management, Chairman of British Road Services (Pickfords) Limited, and of the Atlantic Steam Navigation Co. Ltd., has recently been made public. He left £60,605 (duty paid £16,807).

## Obituary

We regret to record the death on March 11, at the age of 71, of MR. GUSTAV E. PIELSTICK. Mr. Pielstick was Technical Director of the Diesel Engine Department of Maschinenfabrik Augsburg-Nürnberg A.G., and was Technical Director of the Société d'Etudes de Machines Thermiques (S.E.M.T.)—La Courneuve, France—from its foundation, in 1948, until 1954 when he retired.

# NEW EQUIPMENT *and Processes*



## DIESELS FOR REFRIGERATOR WAGONS

Petters Limited, of Staines, is to supply 500 of its Type "PCI" engines to Preco Inc., of Los Angeles, for use in a new temperature-control system for American refrigerator wagons.

The "PCI," a single-cylinder, air-cooled diesel developing 5 b.h.p. at 3,000 r.p.m., has been selected as the power unit for the new system, known as "Cargotemp." The present method of cooling relies on small axle-driven alternators to power electric fans; the fans ceasing to operate when the train stops. The Cargotemp installation consists of a circulating fan and three thermostatically-controlled cooling fans, powered by a self-contained diesel-alternator set located under the wagon.

As the fans operate at a constant speed, instead of depending on the train speed, perishable goods can, if necessary, be held for several days at their destination. There is also a 10 per cent increase in payload, since the increased air circulation at controlled air temperature halves the quantity of ice that need be carried.

An initial user of the Cargotemp system is the Pacific Fruit Express Company, America's largest refrigerator-car operator.

It is estimated that there are now some 30,000 to 40,000 refrigerator wagons in America; this order represents a significant break-through into a vast potential market.

Further information is available on application to Hawker Siddeley Industries Limited, Duke's Court, Duke Street, London, S.W.1.

## SHUTTER-RELEASE AGENT

Known as Polytile shutter release a new coating has been introduced by

Corrosion Limited. This is designed for use on wooden or steel concrete shuttering. Application may be by brushing or spraying. The coating quickly dries to give a hard surface resistant to moisture, abrasion, and impact. It is reported that the shuttering comes cleanly away, leaving a surface with fewer blow-holes than normally.

Compared with oil, Polytile leaves no film on the concrete, and hence saves the expense of preparing the surface of concrete which has to be rendered, painted, or otherwise treated. It is also said to increase the life of wooden shuttering.

The price is £4 2s. 6d. a gal.; allowing for two coats the cost of treatment works out at about 2s. 6d. per sq. yd.

Further details can be obtained from the maker, Warsash Road, Warsash, nr. Southampton.

## NICKEL ALLOY STEEL

An 18 per cent nickel-alloy steel, which is claimed to have outstanding properties of toughness at the highest strength levels of traditional alloy steels, has been developed by the International Nickel Co., Inc. of U.S.A.

It is said to be the only material which can achieve a yield strength in excess of 250,000 lb. sq. in. while maintaining a nil ductility temperature below -80 deg.F. Another outstanding characteristic of this steel is its excellent notched tensile strength which exceeds 400,000 lb. sq. in. (measured under the most severe test conditions with a notch radius .0005 in.). Tests have shown that this new alloy also possesses a remarkable resistance to delayed cracking when exposed to a severe corrosive atmosphere in a highly-stressed condition.

The new steel has a nominal composition of 18 per cent nickel, 7 per cent cobalt, 5 per cent molybdenum and less than

.5 per cent titanium with a maximum of .05 per cent carbon. Higher and lower tensile strengths can be obtained by modification of this basic composition. There are indications that high strength-levels of up to 500,000 lb. sq. in. or even more may be achieved.

Unusually low work-hardening tendencies permit extensive cold forming and shaping with ease. The machining characteristics of the steel are described as excellent both as-rolled and even as fully-hardened. It can be readily welded by either manual or automatic methods. Sound, crack-free welds are achieved, even on material in the fully heat-treated condition, without preheating. Post-weld mar-aging, which is a treatment involving age-hardening of martensite, restores the softened heat-affected zone of the parent plate to full strength and establishes in the weld-metal properties closely approaching those of the base plate.

Additional information is obtainable from the International Nickel Co. (Mond) Ltd., Thames House, Millbank, London, S.W.1.

## CONTACT ADHESIVES

Pitan contact adhesives comprise a solution of mixed synthetic rubbers blended with a reinforcing resin. They are designed for the fixing of plastic laminates and other laminated sheets to table tops, counters and walls. They will bond rubber, plastic, wood, and metal to themselves, to each other, and to plaster and concrete surfaces.

Adhesive No. 1 is of medium viscosity and can be applied by serrated trowel or brush. Adhesive No. 2 is of thinner consistency for easier application by brush. They are claimed to be resistant to oil, petrol, and heat, and are coloured light brown. The coverage is approximately 120 sq. ft. per gal.

Pitan acoustic tile adhesive is a blend of synthetic resins in solution with the addition of fillers, forming a light cream coloured cement of paste-like consistency. It is suitable for fixing acoustic and insulating tiles of glass fibre, fibreboard, and expanded polystyrene to walls and ceilings, and it has gap-filling properties.

Before application of the adhesive the surfaces should be clean, dry, and free from oil, grease, dust, and dirt. Coverage is from 70 to 120 sq. ft. per gal. depending on the weight and type of tile and the surface to which it is to be secured.

Further details may be obtained from Allweather Paints Limited, 36, Great Queen Street, London, W.C.2.

## International Union of Railways

### 58th session of Board of Management in Paris

The Board of Management of the International Union of Railways held its 58th session in Paris on February 21. The meeting was presided over by Mr. John Ratter, Member of the British Transport Commission, and Chairman of the International Union of Railways, supported by M. Armand, Secretary-General, and by M. Rousseau, Chief Executive Officer. The following officers attended:

*Austria:* M. Schantl, General Manager of Ö.B.B.; *Belgium:* M. De Vos, General Manager of the S.N.C.B. and M. Adam, Manager at the General Headquarters of the S.N.C.B.; *Czechoslovakia:* M. Pospisil, Vice-Minister of Transport & Communications of the Czechoslovak Socialist Republic and M. Hlava, Chief Engineer at the Ministry of Transport & Communications; *France:* M. Dargeou, General Manager of the S.N.C.F. and M. Guibert, Assistant General Manager of the S.N.C.F.; *Western Germany:* Prof. Oeftering, Senior Chairman of the German Federal Railway and M. Hennig, "Ministerialdirigent," German Federal Railway, Chairman of the 6th Committee of the U.I.C.; *Eastern Germany:* M. Scholz, Vice-Minister, German State Railways and M. Mrossko, Principal Adviser, German State Railways; *Great Britain:* Mr. J. L. Harrington, Chief Shipping & International Services Officer, British Transport Commission and Mr. G. M. Leach, International Traffic Officer, British Transport Commission, Chairman of the 1st Committee of the U.I.C.; *Hungary:* M. Bango, Assistant General Manager of the Hungarian State Railways and M. Kereso, Adviser, Hungarian State Railways; *Italy:* M. Rissone, General Manager of the F.S. and M. Cuttica, former Deputy-General Manager of the F.S., Chairman of the Special Committee on Automatic Coupling; *Netherlands:* M. Lohmann, Chairman of the N.S. and M. Wanskink, General Manager of the N.S.; *Poland:* M. Tarantowicz, Under Secretary of State, Ministry of Communications; *Portugal:* M. De Brion, Deputy-General Manager of the C.P.; *Sweden:* M. Upmark, General Manager of the S.J.; *Switzerland:* M. Gschwind, Chairman of the C.F.F.

#### New U.I.C. Headquarters

The Board was given details of the tenders received for the main constructional work and the foundations of the new U.I.C. headquarters and agreed that the building should have ten storeys and not eight as originally planned.

At the request of the European Conference of Ministers of Transport, the U.I.C. has prepared a report on the problems facing the European railways, and the Board of Management discussed the fundamental points in the draft report drawn up jointly by an *ad hoc* working party of the 6th Committee (General Studies), M. Tuja, Adviser

to the U.I.C. and the General Secretariat. The text of the report was amended in accordance with remarks made during the meeting and will be sent to the E.C.M.T. which will have it examined by a special study group which is to meet in Rome from March 21 to 23.

In the work which is carried out by the study bodies of the U.I.C., the board approved the conclusions reached by the 6th Committee during its meetings at Madrid at the beginning of October, 1960, and particularly those dealing with problems connected with pipelines and those related to road infrastructure.

#### Automatic couplings

With regard to the question of automatic coupling, the board stated that it wished to have a report placed before it, as soon as possible and preferably at its next meeting, summarising the situation from a technical standpoint and including all economic and social factors likely to be of value to each administration when they assessed the problem of the introduction of automatic coupling.

The programmes of work and the budgetary estimates for the 1960-61 working year of the two sections of the recently set up Information & Publicity Centre of the European Railways (C.I.P.C.E.) were approved. The board also gave its approval to the programmes of work of the working party on supplies and looked into the possible participation of the railways in the New York World Fair in 1964/65.

The technical committees and commercial committees of the U.I.C. are to hold their next sessions in Paris at U.I.C. headquarters on May 9 to 18 and June 14 to 22 respectively. Finally, the Secretary-General gave the board details of the meetings where the U.I.C. was represented by the General Secretariat.

The next meeting of the board will be held in Paris on June 1.

### U.I.C. Commercial Sub-Committee meetings

Following an invitation extended by the Czechoslovak Railways, the Sub-Committees of the U.I.C.'s First Committee (Passenger Traffic), Second Committee (Goods Traffic), and Third Committee (Finance, Accountancy, Statistics), held meetings in Prague, March 2-11 this year. They were attended by some 120 delegates, representing 15 different railway administrations.

Under the Chairmanship of Mr. G. M. Leach, International Traffic Officer, British Transport Commission, and Chairman of the First Committee, the passenger traffic sub-committees examined a number of questions and, in particular, dealt with the problems raised by the development of motorcar and air traffic. They also examined methods to standardise still further the system of seat reservations in international trains and decided to resume the study of conventional signs for use in stations. An

account was also given of the latest contacts between the U.I.C. and the Air Research Bureau of Brussels, and it was mentioned that the two bodies were to look into the possibilities of a combined ticket and would study the question of rail services between cities and airports.

#### Transport of road vehicles

In the field of goods traffic, the competent Sub-Committees, under the Chairmanship of M. Dirlwanger, Chief Traffic Officer of the Swiss Federal Railways, and Chairman of the Second Committee, paid special attention to the preparation of a model tariff, within the framework of tariff standardisation, and to the compilation of a standard goods nomenclature. The sub-committees examined the possibility of introducing for international traffic a system of inclusive charges for sheets and other loading tackle, and also the agreements which exist between the railways and the air lines in regard to combined goods traffic. Questionnaires were finalised in respect of the transport of goods road vehicles on wagons (piggy-back) and of new motorcars on special types of rolling-stock.

The Sub-Committees of the Third Committee examined a number of questions, including the studies on the use of electronic data-processing machines and rates of exchange for adjustment and settlement of accounts. Various questions concerning statistics, improved costing methods, and relations with travel agencies were also discussed.

A sight-seeing tour of Prague was arranged for delegates and their ladies on March 4, and a cocktail party was given by the Czechoslovak Railways at the Praha Restaurant on March 9.

### Production of steel castings

The foundry processing required for a wide range of products for the transport, marine, and industrial fields was demonstrated last week by the North British Steel Foundry Limited, Bathgate, West Lothian. Lord Polworth, Chairman of the Scottish Council (Development & Industry) attended, and emphasised the high-speed freight and passenger transport facilities available to and from Scotland.

The object of the demonstration was to show that by the use of the most modern foundry techniques and strict quality control, steel castings are often cheaper and more suitable than forgings or stampings.

#### Production Instructions

Before the production of any casting a method card is issued with the drawing giving detailed instructions for coremaking, steel melting, moulding, heat treatment, and inspection. These instructions are based largely on investigation and test reports which have been compiled and issued by the comprehensive laboratory with which the foundry is equipped.

Sand selection, grading, and mixing are closely controlled and the mixing, drying, and distribution by conveyor is fully mechanised. A mobile sandslinger is used for the filling of large moulds. Production runs of small castings are produced on McKie & Baxter moulding machines. Two Efco tilt-



ing electric arc furnaces, one of 6½-ton and one of 4-ton capacity, are used for steel melting. Annealing and normalising is carried out in a large-capacity Efcro resistance furnace.

The foundry has a capacity of 150-200 tons of finished castings a week, produced in a wide range of sizes to a maximum of 10 tons per casting. Steel specifications available are based on a range of British Standard Specifications covering carbon, alloy, and corrosion-resistant steels. The inspection department is fully equipped to cover all routine physical testing, and also non-destructive testing by radiography and magnetic crack testing. Adjacent to the foundry is a well-equipped machine shop to enable castings of all weights to be supplied proof machined or finish machined as required.

### Running & Maintenance organisation course

A five-day course was held from March 6 to 10, at the British Transport Commission School of Transport, New Lodge, Windsor, under the auspices of the Line Traffic Manager, Great Northern Line, for technical staff of the newly re-organised Running & Maintenance Organisation.

Under this organisation, which came into effect on January 30, the maintenance of all rolling stock, road motor vehicles and static machinery became the responsibility of the Traffic Department, that is, the Line Traffic Manager and the Traffic Managers of the districts. The Chief Mechanical & Electrical Engineer of the Region retains responsibility for all work done in main workshops and for schedules of maintenance.

#### Part of Team

The course was arranged to bring together representatives of the previously separate Motive Power, Carriage & Wagon, Road Motor, and Outdoor Machinery Departments who now all form part of the traffic team.

Papers read at the conference covered many subjects from modernisation on the Eastern Region, management, staff, accountability and work study, to the maintenance of rolling stock, road vehicle machinery and diesel main-line locomotives.

Syndicate working in groups of five or six members on two-set problems based on the conference subjects was also included.

### L.M.R. Irish Services

The London Midland Region, British Railways, plans for summer holiday passenger traffic to and from Ireland *via* Holyhead, include additional relief sailings at peak-travel periods; special trains from Birmingham and Manchester on Friday evenings to connect with extra sailings at 1.30 a.m. from Holyhead on Saturdays, July 22 and 29 and August 5; and increased catering facilities on connecting trains from London (Euston).

Improved passenger amenities at Holyhead and Dun Laoghaire will play their part in making for smoother travel. The benefits of the large-scale modernisation works being carried out on the L.M.R. will make for better train running which, together with improved customs arrangements at Holyhead, should expedite the movement of passengers.

There will be strict regulation of passengers on the trains connecting with all those sailings for which sailing tickets are required. The control, previously applied only at the point of embarkation, will be extended to cover the connecting train services. No one without the appropriate sailing ticket will be permitted to join the connecting trains for Holyhead on dates when sailing tickets are required.

### Parliamentary Notes

#### Railways' Problems for the Electrical Industry

Lord Merrivale drew attention in the House of Lords, on March 21, to the problems created by Government policy for British Railways and the electrical industry.

He said that the capital investment programme of the nationalised industries was varied from time to time as a means of regulating the economic system.

Looking to the future of railway electrical equipment, Lord Merrivale said that prospects existed over the next few years for approximately £190 million of overseas

business. One further good sign was that there seemed to be a growing recognition by manufacturers and the nationalised industries that in present world conditions co-operation between all sectors of the industry was essential for a really effective export drive. Such products were an ideal form of British export endeavour as they were mainly of a technical and highly developed nature. The Government's policy was to promote an economic growth at a pace dictated by the need to maintain a rough balance between supply and demand, and he recognised the need for economic controls, at a period when demand tends to increase at a faster rate than available resources. But some were very discriminatory.

#### Electrification Planned Only One Year Ahead

Lord Merrivale urged the Government to initiate consultation, with a view to setting up an organisation similar to the Railway Advisory Service, which would group the Central Electricity Generating Board, the Board of Trade, and the industry, for the purpose of giving advice to those countries requiring it on power supply installations.

Lord Citrine, Chairman of the British Electricity Authority, said they had had cuts in capital investment, and the most recent in railway electrification, for example, made planning impossible. He added: "Long-range planning, in the sense of companies expanding their works, and employing additional people, administrative staff, scientists, technicians and all that sort of thing, involved overheads that could not very quickly be got rid of. It raised all sorts of human problems, too, that most decent employers would not wish to encounter."

Lord Stonham said that all that the electrical industry was asking for was that the Government should create stable conditions. It also asked for the approving of and adherence to long-term investment programmes, programmes fixed and adhered to for five years ahead. In railway electrification they were still fixed for only one year ahead, indeed, he did not even know that at the moment they were fixed as far ahead as that.

#### How Railways Can Help Other Industries

Speaking of the close identity of interests between the manufacturers of heavy electrical equipment and the nationalised electric supply and transport undertakings, Lord Stonham said he was very happy to hear from Lord Citrine of the constant efforts to improve that co-operation. In the past few years the Government had approved major capital expansion programmes, and the contracts had been placed. Whitehall had then changed its mind, and the axe had fallen. The railway electrification programme had been held up a long time.

It was true that the London-Manchester line was now going to be carried through, but nobody knew yet what was going to happen about the remainder of railway electrification. There were enormous losses caused by changes of this kind. It is all very well saying these things are unavoidable. They were avoidable if the thing was properly planned and properly thought out beforehand. In railway electrification alone over the last few years, £15 million had been spent on research—that is, £15 million on



Mr. G. F. Fiennes (fourth from left, front row) with officers and members of the conference



research, in that one single department; and there had been a tremendous amount of other expenditure.

The losses and the frustration, the stopping and the starting, and all the consequent misfortunes, were not confined to the home market. These losses affected our exports, too; and the Minister of Transport had done real damage to the electrical trade overseas through this policy. As had already been said, there was a potential market in railway electrification goods amounting to some £190 million, and that was a market which we ought to be well placed to capture. In this section, of course—the heavy electrical goods section—the industry was almost entirely dependent on the orders from the nationalised undertakings, because, by the very reason of things, they were the sole buyers. There was no alternative home market, and without a good basic home demand it was virtually useless to think of exports.

#### Control of Railway Finance

Lord St. Oswald, Lord-in-Waiting, said Government control was essential when the railways were spending such large sums (£160 million in 1960) on railway modernisation, much of it being provided by the Exchequer, and when revenue deficits of the British Transport Commission, mainly incurred on the railway, were also being met by the Exchequer (to the extent of £105 million in 1960-61).

This control led to some slowing down of work on certain railway projects pending review, but many projects went ahead with little or no delay. It could not be unreasonable for any Government to look closely at a scheme costing in all some £175 million to make sure that money received from the taxpayers was being spent in the best way. Seven weeks ago it was announced that the electrification of the main line from Euston to Crewe, Manchester and Liverpool, would go ahead as quickly as was consistent with the best use of resources. This would represent a total cost of £175 million, including some associated station works, part of which contract will also go to the electrical industry. The Minister further declared that the Government's approval of this, the largest scheme of all, should be taken as evidence of the Government's faith not only in modernisation, but in the British electrical manufacturing industry.

## Questions in Parliament

#### Conversion of rail track into road

Mr. G. Jeger (Goole—Lab.) and Mr. J. M. Coulson (Kingston-upon-Hull N.—Con.) asked the Minister of Transport on March 15 what conclusion he had reached from the census of traffic over Boothferry Bridge taken in October last, and whether he would make a statement on the proposal to convert the Hull-Barnsley rail track into a motor road.

Mr. John Hay, Parliamentary Secretary to the Minister of Transport, said the main purpose of the traffic census taken last October near Boothferry Bridge was to determine whether it would be worth while to use the abandoned Barnsley-Hull railway track for a new road between Howden and the Great North Road. The examination of the infor-

mation obtained had not yet been completed.

#### New Chairman's expenses allowance

Mr. H. Hynd (Accrington—Lab.) asked the Minister of Transport on March 22 what expenses allowance would be available for the new Chairman of the Railway Board; and whether the post would be pensionable.

Mr. Ernest Marples said, in a written answer, that the British Transport Commission's present procedure in making expense allowances would apply to Dr. Beeching while he was a member and, later, Chairman of the Commission. In considering the appropriate provision under forthcoming legislation he would take account of existing procedure. He would also have to consider making the appropriate provision for pensions for the Chairman and full-time members of the new Railways Board. Dr. Beeching's pension provision would, in the special circumstances of his appointment, remain the responsibility of Imperial Chemical Industries Limited.

#### Salaries of Railway Board members

Mr. Hynd also asked what consequential arrangements would be made for the salaries of other members of the Railway Board to preserve a reasonable relationship with the salary of the new Chairman.

Mr. Marples, in a written answer, said that the salary of the new Chairman would be an exceptional salary payable to a particular person for a special task. He did not envisage any consequential effects on the general level of salaries.

#### Railways power to operate pipelines

Mr. A. E. Oram (East Ham S.—Lab.) asked the Minister of Transport what were his plans to give railways power to operate pipelines on their property as indicated in paragraph 59 of the White Paper Cmd. 1248.

Mr. Marples, in a written answer, said that he planned to include provisions for this purpose in the Bill which was to be introduced next Session to give effect to the proposals in the White Paper.

#### Marylebone-Sheff'd line

Mr. G. Darling (Hillsborough—Lab.-Co-op.) asked the Minister if he would refer to the appropriate Transport Users' Consultative Committee the proposal to close stations and depots on the former Great Central line between Marylebone and Sheffield, and the proposal to curtail present services of freight and passenger trains on this route.

Mr. John Hay, Joint Parliamentary Secretary, said that the railway regions concerned would, in due course, submit proposals to the Transport Users' Consultative Committees for the areas affected.

Mr. Darling told him that the Transport Commission, instead of putting forward an overall plan to the Central Consultative Committee, was putting forward detailed plans to each local committee and was proceeding with closures before receiving the views of the local committees, even though no alternative transport was provided. In these circumstances, was it not agreed that what was needed was an overall plan to go to the Central Consultative Committee rather than proceed in this piecemeal fashion?

Mr. Hay did not agree. As he understood the situation, the regions had yet to

put forward their proposals to the area committees. Until they did that—and that was the normal practice in these cases—neither the Minister nor he had any standing in the matter.

Mr. Darling asked why proposals on this line had been put forward to the staff consultative council before any proposal had been made.

Mr. Hay told him that was the normal practice. The men were usually consulted through the national conciliation and discussion machinery before the various projects were put forward. That was an entirely different matter from putting forward proposals for the closure of a line or the withdrawal of a service to various area transport users' committees.

Mr. Darling gave notice that he proposed to raise the matter on the adjournment.

#### Uneconomic services

Mr. Percy Browne (Torrington—Con.) asked the Minister of Transport what progress H.M. Government had made in its consideration of the closing of uneconomic railway services, and what consideration was being given to the replacement of branch railway lines by alternative means of transport.

Mr. Marples said that this question—the complexity of which should not be underrated—was being studied in the context of para. 50 of the White Paper on the Reorganisation of the Nationalised Undertakings. He had no statement to make.

Mr. Browne asked him to ensure that the special problems of the remoter districts were given due consideration. Would he consider instructing licensing authorities, where necessary, to be lenient when dealing with applications by small operators of passenger vehicles.

Mr. Marples replied that this point was covered by the existing Statutes. The Transport Users' Consultative Committee took account of alternative facilities when they considered proposals for closures.

## Marking of Imported ball or roller bearings

The Board of Trade has been advised that the Merchandise Marks (Imported Goods) No. 4 Order, 1928, should be further amended in accordance with the terms of the Merchandise Marks (Imported Goods) No. 4 Order, 1928 (Provisional Exemption) Direction, 1960. This direction exempts any imported ball or roller bearing of which the outside diameter is not more than  $\frac{1}{4}$  in. (12.7 millimetres) from having itself to bear an indication of origin, but requires that the indication be printed or stamped on the wrapper or container in which the bearing is imported, sold or exposed for sale as the case may be.

This recommendation is contained in the Report of the Standing Committee (General Merchandise) set up under the Merchandise Marks Act, 1926, and published on March 17, 1961, as Cmnd. 1310. Copies of the report are available direct from H.M. Stationery Office, or through booksellers.

Representations to the Board of Trade by traders or other members of the public regarding the marking of imported goods are referred to the Standing Committee (General

Merchandise). An affirmative recommendation of the Committee, if accepted by the Board of Trade, is put into effect (subject to approval by Parliament) by means of an Order in Council.

### Open Forum at Sunderland

News that the "go ahead" had been given to plans for a new railway station at Sunderland was revealed to an audience of over 300 people by Mr. W. Clegg, Traffic Manager for the Tyne & Wear district, at an Open Forum held by the North Eastern Region of British Railways at Sunderland on March 13. Mr. Clegg said that the new station was planned to harmonise with the Corporation's design for a new town centre, and would include a large new refreshment room and bar, together with a new waiting room, booking office and other modern amenities. To make room for this expansion the station is to be extended at the south end, and the Atheneum Street railway bridge will be widened. At the north end there is to be a pedestrian through-way between Station Street and Union Street.

The Forum followed its usual pattern—the showing of the latest B.T.C. "Report on Modernisation" film, a talk by the Traffic Manager, and a question and answer session from the body of the hall during which Mr. Clegg was joined on the platform by Mr. F. C. Margetts, the Assistant General Manager (Traffic) for the Region, Mr. H. Bell, District Motive Power Superintendent, Mr. S. Cott, District Goods Superintendent, Mr. N. R. A. Paton, District Operating Superintendent, and Mr. K. N. Sidebotham, District Passenger Superintendent.

The meeting was attended by the Chair-

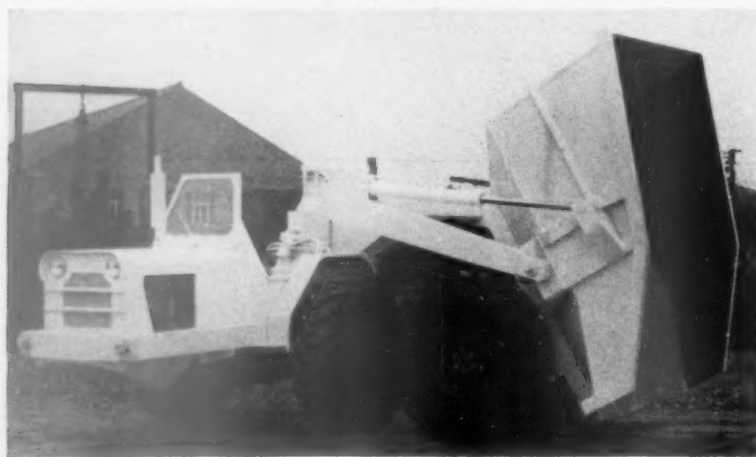
man of the North Eastern Area Board, Mr. T. H. Summerson, D.L., J.P., the General Manager of the North Eastern Region, Mr. H. A. Short, C.B.E., M.C., Mr. G. H. Kitson, O.B.E., T.D., a member of the North Eastern Area Board, and Alderman J. Tweddle, Mayor of Sunderland.

### Muir-Hill-Camill articulated dumper

The Muir-Hill-Camill 7-cu. yd. articulated dump truck is of robust construction, and is claimed to incorporate many original design features including an integral body-chassis structure, and an ability to extricate itself from soft ground. The dumper body and chassis

are combined in one rigid unit, with the rear wheels mounted on stub axles, which are also integrated with the body.

The tractor unit and body are linked by a horizontal swivel, king post, and wish-bone assembly, which provides a 20-deg. lateral articulation on either



### IMPROVED FREIGHT HANDLING AT SOUTHAMPTON



*New cargo transit shed, part of the improved freight handling at Southampton (see page 363)*

side of the vertical, and a steering movement of 180 deg. about the wish-bone. The body is connected to the wish-bone ends by large-diameter pivot pins, and two 3½-in. dia. double-acting hydraulic rams, which tip the body to provide a 55-deg. discharge angle. The body may be freely tipped and re-set while the machine is travelling, the tipping rams being actuated by a vane-type hydraulic pump through selector gear.

The tractor frame is fabricated from 6 in. x 4 in. R.S.C. main members, strongly cross-braced, and the engine and transmission unit is readily detachable for maintenance purposes.

#### Fordson power unit

The power unit is a Fordson Power Major diesel engine, developing 52 b.h.p. at 1,600 r.p.m. The transmission consists of a dry-plate clutch and a constant-mesh gearbox, controlled by two levers, giving six forward speeds ranging from 2 to 13 m.p.h., and two reverse speeds of 2.75 and 5 m.p.h. The driving axle is of the semi-floating type, solidly mounted to the frame.

Brakes are pedal-operated, those for the rear-wheels being of the Dunlop hydraulic disc type with vacuum-servo boost, the front brakes being of the hydraulically-operated disc type. The four reinforced disc-type wheels are interchangeable and are fitted with Dunlop Earthmover 14-00 x 24 x 12 ply tyres.

Steering is by direct mechanical linkage, hydraulically-assisted through four double-acting rams, and is claimed to be

light and sensitive in all ground conditions. Limited steering power by mechanical linkage is still available in the event of failure of the hydraulic system. Only 4½ turns of the steering wheel are required from lock to lock to give a 180-deg. turn.

If the wheels become bogged down in soft ground, the machine can extricate itself with an "open-and-shut" movement produced with the aid of the tipping rams and the alternate use of the wheel brakes.

The payload of the machine is 20,000 lb. and its shipping weight is 12,300 lb.

### Stafford Station improvement

The London Midland Region of British Railways has announced that authority has been received from the Ministry of Transport to continue the work of reconstruction at Stafford and that the contracts have been placed for the erection of the station buildings and yardmaster's office.

Work will begin immediately the concrete piles for the foundations are finished.

Percy G. Trentham Limited, of Stoke-on-Trent, is the major contractor for the station buildings and George A. Poole Limited of Newcastle, Staffs, for the yardmaster's office.

Five platforms, now under construction, will be ready for service by May this year, and improvements to temporary buildings will be carried out pending completion of the permanent buildings and station roof.

### New marshalling yard at Stourton

Final approval has been given for the construction of a modern, mechanised marshalling yard by British Railways, North Eastern Region, on a site at Stourton, near Leeds. Planned to deal with freight traffic passing in a North/South direction, the Stourton Yard will replace 14 smaller yards and will incorporate the most up-to-date mechanical and electronic equipment. When in operation, in about three years' time, 3,500 to 4,000 wagons will be sorted in its sidings every day. The new yard will greatly improve freight transit times for traffic passing to, from, and through the West Riding as well as effecting substantial economy in freight traffic operations.

A key part in the North Eastern Region's marshalling yard plan, this yard will be sited to the west of the ex-Midland main line between Hunslet and Woodlesford, and work will start shortly on the construction of a cutting at its southern end to give a connection to the main line near Rothwell. This will provide a rail connection for the transport of excavated spoil from the site of the yard which will be used as filling material in its sister yard at Healey Mills, where the construction of an East-West marshalling yard is well advanced.

At the Stourton yard operations will be controlled by colour-light signals from a central control tower overlooking a hump down which the rail wagons will roll into sorting sidings. Electronic apparatus con-

trolling wagon retarders will slow down the wagons as they roll off the hump into the correct sidings.

A radio network, using a system of transmission which has as its medium the magnetic field of an encircling loop of wire, will link the yard locomotives with the control tower and Yard Inspectors. It will also enable the indication of the signals controlling movements over the hump to be repeated in the cabs of the shunting locomotives. A talk-back loudspeaker system will link the control tower with outside staff at key points in the yard.

The control tower will incorporate a central signalbox which will control the yard operations and the signalling over the main line between Leeds and Methley for some six miles. This signalbox will be power-operated, incorporating a route relay interlocking system with colour-light signals controlling an area at present controlled from 12 signalboxes.

The new yard at Stourton, taken together with the marshalling yards at Healey Mills (near Wakefield), Newport (near Middlesbrough), and Lamesley (near Newcastle), all of which are already under construction, will complete the major marshalling yard plan for the North Eastern Region.

## CONTRACTS & TENDERS

### BOARD OF TRADE

The Export Services Branch, Board of Trade, has received calls for tenders as follows:—

#### From India:

1 vertical core stove and one horizontal core stove.

The issuing authority is the Deputy Chief Mechanical Engineer, Steel Foundry, C.L.W., Chittaranjan, to whom bids should be sent. The tender No. is SFM-60/09/7-A. The closing date is June 12, 1961. The Board of Trade reference is ESB/10409/61. No further information is available at the Board of Trade.

Heat treatment furnaces comprising: (1) two annealing, normalising and tempering furnaces, (2) set of heat treatment trays, (3) a furnace charging machine, (4) a heat treatment furnace for manganese railway crossing, and (5) a water quenching system for manganese railway crossing.

The issuing authority is the Deputy Chief Mechanical Engineer, Steel Foundry, C.L.W., Chittaranjan, West Bengal, to whom bids should be sent. The tender No. is SFM-60-00-9A. The closing date is June 12, 1961. The Board of Trade reference is ESB/10411/61. No further information is available at the Board of Trade.

Cleaning plant comprising: a cabinet type airless cleaning plant (bogie type), room type shot blast plant, twin table type airless cleaning plant, and tumbler type airless cleaning plant with alternatives

for (1) a hydraulic fettling plant; and (2) conveyor type airless cleaning plant.

The issuing authority is the Deputy Chief Mechanical Engineer, Steel Foundry, C.L.W., Chittaranjan, to whom bids should be sent. The tender No. is SFM-60/09/6-A. The closing date is June 1, 1961. The Board of Trade reference is ESB/10085/61. No further information is available at the Board of Trade.

Sand system comprising: (1) reception; (2) preparation; and (3) knock-out.

The issuing authority is the Deputy Chief Mechanical Engineer, Steel Foundry, C.L.W., Chittaranjan, to whom bids should be sent. The tender No. is SFM-60/09/5-A. The closing date is June 1, 1961. The Board of Trade reference is ESB/10084/61. No further information is available at the Board of Trade.

2 mobile sand slingers.

The issuing authority is the Deputy Chief Mechanical Engineer, Steel Foundry, C.L.W., Chittaranjan, West Bengal, to whom bids should be sent. The tender No. is SFM-60/09/11-A. The closing date is June 5, 1961. The Board of Trade reference is ESB/10087/61. No further information is available at the Board of Trade.

4 electro-magnets

The issuing authority is the Deputy Chief Mechanical Engineer, Steel Foundry, C.L.W., Chittaranjan, West Bengal, to whom bids should be sent. The tender No. is SFM-60/09/13-A. The closing date is May 1, 1961. The Board of Trade reference is ESB/10086/61. No further information is available at the Board of Trade.

10,500 furnace fire bricks for 42 in. bore cupola as per CME/PHT'S Cat. No. 1 (Rev.) page 2. S. & D. Spec. No.; M.G. 96/56 high heat duty

17,600 furnace fire bricks for 30 in. bore cupola as per CME/PHT'S Cat. No. 1 (Rev.) page 1. S. & D. Spec. No. M.G. 96/56 high heat duty.

The issuing authority is the office of the Chief Controller of Stores, Pakistan Eastern Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P1/GB10/262/60/ACST. The closing date is April 19, 1961. The Board of Trade reference is ESB/10066/61. No further information is available at the Board of Trade.

#### From Saudi Arabia:

1 plant, complete, for manufacturing prestressed reinforced railway ties, output 1,000-2,000 ties per week of type for use on American Standard railroad gauge track.

Additional equipment to double the output of the capacity of the above plant.

The issuing authority is Brown Engineers International Inc., 10 Columbus Circle, New York 19, N.Y., U.S.A., to whom bids should be sent. The tender No. is 112 RR (NY). The closing date is April 10, 1961. The Board of Trade reference is ESB/10422/61/I.C.A.

Further details relating to the above tenders together with photo-copies of tender documents, unless otherwise stated, can be obtained from the Branch (Lacon House, Theobald's Road, W.C.1).



## NOTES AND NEWS



*Plasticell interlayers being assembled on containers*

**"Western Region" not "Eastern Region."** In last week's issue we inadvertently ascribed certain contracts in our contracts and tenders column to British Railways, Eastern Region. These contracts were placed by the Western Region.

**Reynolds & Wilson Limited.** In last week's issue the title of "Reynolds & Wilson Group" was quoted in reporting the company's change of address. This should have read "Reynolds & Wilson Limited."

**Self-inflating liferafts.** A further 22 Dunlop inflatable liferafts have been ordered by the British Transport Commission for their passenger ships *Cambria* and *Hibernia*. The two ships, which ply between Holyhead and Dun Laoghaire on the London Midland Region route to Ireland, now carry 85 of these 20-man self-inflating liferafts between them.

**Birlec furnaces in Australia.** An agreement has been made between A.E.I.-Birlec Limited, of Birmingham and Major Electric Furnaces Pty. Ltd., of Melbourne, Australia, for the setting up in Melbourne of a company to be known as Birlec-Major Pty. Ltd., which will manufacture every type of electric and gas-fired furnace, for heat-treatment and melting processes, at present built by Birlec and its associate companies in Great Britain. The new company will also market its products in New Zealand and S. E. Asia.

**Drawings storage cabinet.** To store large-size antiquarian drawings "in the flat" J. H. Randall & Son Limited, of Paddington Green Works, London, W.2, have produced a 44-in.-high sheet-metal cabinet holding 30 trays each capable of filing 50 drawings.

This unit has been awarded a silver medal at the International Inventors' Exhibition, held in Brussels this month.

**Microcell at Earls Court.** At the International Refrigeration & Air Conditioning Exhibition at Earls Court (April 11-14) Microcell Limited will demonstrate applications of Plasticell in the refrigeration, air conditioning and allied industries. The

illustration on this page shows two 20-cu. ft. containers being assembled with interlayers of Plasticell.

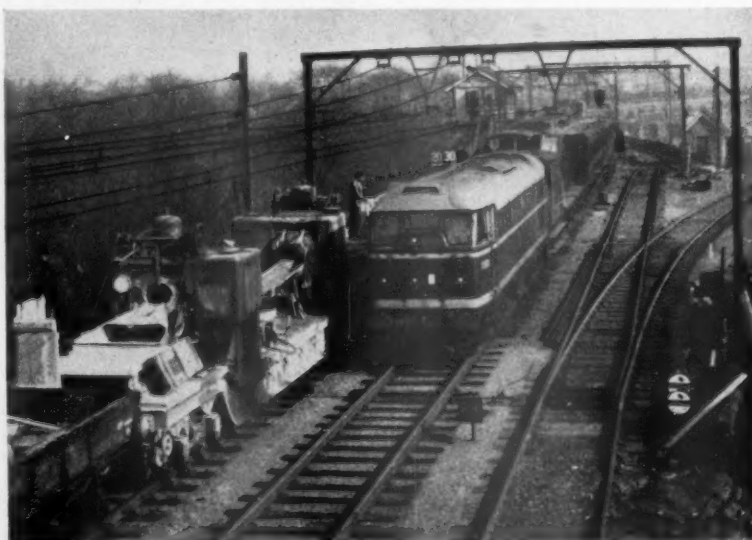
**Formica price reduction.** Formica Limited announce a substantial reduction in the price of their new constructional Formica "Beauty-board."

**Crewe dinner.** The fifty-fourth Crewe dinner is to be held on April 21, at Whitehall Court, London, S.W.1. The chair will be taken by Mr. H. G. Ivatt and the principal guest will be Mr. R. F. Hanks, chairman of the Western Area Board, British Transport Commission. Early application should be made for tickets, which are obtainable from Mr. F. B. Roberts, honorary secretary, Crewe Pupils & Apprentices Association, 36, Bedford Street, London, W.C.2. Prices are respectively 35s. and 20s. for past and present Crewe men.

**British Transport advertising rentals changes.** Revised charges by British Transport advertising have been announced to come into force on July 1. The main increases are: London red bus sides to £52 a year; Underground 24" x 11" car panels to £2.12.0 a year; Underground escalator panels: 50 to 99, to £16 each a year; 100 to 149, to £15 10s. each a year; and 150 and over, to £15 each a year. The rentals for double crown, quad crown and four-sheet sites on British Railways stations and properties have also been changed. Full details may be obtained from British Transport Advertising, Transad House, Leicester Square Station, London, W.C.2, or 6-7, Castle Terrace, Edinburgh, 1.

**Provident Mutual Life Assurance bonus.** That life assurance continues to be an excellent medium of saving as well as giving protection to dependants is shown by the bonus announcement of the Provident Mutual Life Assurance Association which appears on another page of this issue. The rates declared are considerably higher than those of five years ago and will give satisfaction to the

### BRITISH RAILWAYS MODERNISATION AND ELECTRIFICATION



*Wiring and concreting trains at Gas Factory Junction on the London Tilbury & Southend line*



## PAKISTAN LOCOMOTIVE COVERS ONE MILLION MILES



*North Western Railway diesel locomotive No. 2012 built by Alco Products*

large number of railwaymen who are policy-holders. The latest accounts show continued progress and the strong financial position which has been built up over the years by this association.

**Diamond Drilling.** A new division of Coventry Compressors Limited, 32, Stewarts Road, London, S.W.8, has been formed to deal with the problems of penetrating all types of materials used in construction and installation work. Among the harder materials will be reinforced concrete, artificial stone, glazed wall tiles, quartz, refractory bricks, granite and marble.

**Morgan exhibit at Hanover.** The Morgan Crucible Group will be exhibiting a range of their products at the forthcoming German Industries Fair, to be held at Hanover, April 30-May 9. Featured on the stand, in addition to crucibles and foundry accessories, will be three furnaces. Two of these, of 500 lb. and 200 lb. capacity, will be for aluminium, the third will be a high-temperature electrically-heated muffle.

**Hawker Siddeley publications.** As a result of re-organisation of the public relations activities within the Hawker Siddeley Group, it has been decided to cease publication of the Hawker Siddeley Technical Journal in its present form. In future the activities of Hawker Siddeley Aviation and Hawker Siddeley Industries will be presented in two separate magazines.

**Hawker exhibits at Moscow.** A major feature of the Hawker Siddeley Industries Limited exhibit, at the forthcoming British Trade Fair at Moscow in May, will be engines, models, and photographs. Also on display will be a sectional and motorised Series "20" turbocharger, as fitted to the British main-line diesel-electric locomotives supplied to British Railways.

**Isle of Man Railway company meeting.** At the ordinary general meeting of the Isle of Man Railway Company, on March 9, the Chairman reported an increased balance of receipts over expenditure of £964, and said that the future was not lacking in signs

of development of the island as a health and holiday resort on a larger scale than contemplated in recent years. Dividends on the Preference share Capital of 5 per cent, and on the paid-up ordinary share capital of 2½ per cent were declared, payable on March 16.

**Holiday runabout tickets.** Holiday runabout tickets are being re-introduced on April 30 by British Railways Western Region for the 1961 season. Available for one week's unlimited travel within 21 specified areas on the Region, the cost of these tickets varies from 20s. to 35s.

**Japanese National Railways.** In our issue of January 13 we included under "Publications Received" notices of two recent booklets issued by the Japanese National Railways. These were "Facts and Figures" and "Japanese National Railways in 1960." We are informed by the Japanese National Railways that as a result of this reference so many requests have been received for copies of these booklets that the stock has been depleted,

and we are requested to explain to our readers the reason for the delay in meeting their requirements.

**Roofing a staff canteen.** A new roofing system, a development in the field of timber engineering, is being used in the construction of the British Railways staff canteen project at present under way at the Oldham Road Goods Depot, Manchester. A prefabricated timber beam known as Tecton supplants the more complicated and costly roof-truss system. These beams in each bay carry the roof to either stanchion or crossbeam, and give a greater freedom for design. The builders are Thomas & Edmund Warrington (Hyde) Limited, of Hyde. The canteen was designed by Mr. W. R. Headley, Regional Architect, London Midland Region, under the direction of Mr. A. N. Butland, Chief Civil Engineer.

**Holiday period tickets from Sheffield area to the East Coast.** The Eastern Region of British Railways has announced that reduced fare holiday period tickets from the Sheffield area to Skegness, Sutton-on-Sea, Mablethorpe, Yarmouth, and Lowestoft will again be issued this year. These will be available from most stations in the Sheffield, Barnsley, Chesterfield, Mexborough, Penistone, Rotherham, Shirebrook and Woodhouse areas. A reduction of 20 per cent on each adult ticket purchased is offered, allowing travel by any ordinary, or advertised special, train. The tickets will be valid for the return journey, the day after purchase, or any day up to 15 days. This facility operates from Tuesday, May 2, until Thursday, October 26.

**Jointing rarer metals.** A one-day symposium on the "Jointing of Rarer Metals" will be held at the Borough Polytechnic, Borough Road, London, S.E.1, on April 20. Six papers will be presented on present-day methods and recent advances in this field.

**Lifting barriers at Blackford level crossing.** The level crossing gates at Blackford on the Scottish Region of British Railways have been replaced by lifting barriers. The Stirling-Perth trunk road has been widened and straightened to provide a better approach



*Lifting barriers which have been installed at Blackford level crossing in the Scottish Region*

for road traffic and double electrically-driven half lifting barriers provided on each side of the crossing. Twin red flashing road signals, 8 ft. above road level on each side, are extinguished when the barriers are raised. On closure of the crossing to road traffic the red lights flash for five seconds before the two nearside barriers begin to descend. When the two nearside barriers have been lowered and all vehicles clear of the crossing, the two offside barriers descend. The barriers are painted with alternate red and white vertical stripes 2 ft. wide and two red electric lights and an 18 ins. dia. target have been provided on each. Wicket gates have been provided for pedestrians which remain unlocked until an approaching train is near when they are locked mechanically from the signal box. To prevent cattle from straying on to the railway 6-ft. cattle grids have been provided.

**Industrial finishes exhibition.** The Chairman of the Industrial Finishes Exhibition, scheduled to take place at Earls Court, London, between May 8-11 this year, will be Dr. J. E. Garside, Principal, Borough Polytechnic; Mr. E. A. Ollard, electro-plating consultant; Mr. H. W. Fender, Chairman, Metal & Plastics Coatings Association, and Mr. J. L. Adcock, Paints Division, Imperial Chemical Industries Limited. Papers will cover automatic polishing; surface coating methods and equipment; nickel-chromium plating; organic coatings; finishing aluminium; metal spraying, and titanium in industrial finishing. Delegates will be shown films and taken on works visits. Registrations can be made to the Convention Secretary, Scientific Surveys Limited, 97, Old Brompton Road, London, S.W.7, from whom further details can be obtained.

## Railway Stock Market

The recent strong outburst of strength in stock markets was followed by some profit-taking, and holiday influences slowed down activity. Nevertheless, despite international news and Budget uncertainties, there is a general tendency to take a hopeful view of the outlook because of the belief that world trade is improving, and that in the circumstances, Britain's trade gap is likely to narrow in the next months ahead.

Among foreign rails, Antofagasta ordinary stock strengthened from 15½ to 15¾, but the preference stock remained at 35½, while the 4 per cent perpetual debentures kept at 45½. Chilean Northern 5 per cent first debentures were 50½. Costa Rica ordinary stock was 41½ with the first debentures 97½ and the second debentures 125.

International of Central America common shares were \$24½ with the preferred stock quoted at \$119½. Guayaquil & Quito assented bonds kept at 50½, Brazil Rail bonds were 4½, Mexican Central "A" bearer debentures changed hands around 61, while in other directions, United of Havana second income stock was again 6½. San Paulo Railway 3s. units eased to 1s. 2½d. Midi 4 per cent sterling bonds have been maintained at 85½.

In other directions, a feature has been a rally from 10s. 6d. to 11s. 6d. in Nyasaland Railways shares, business in which ranged up to 12s. Canadian Pacific eased with Wall Street to \$45½. The preference stock

was 60½ and the 4 per cent debentures 58½.

In the locomotive building and kindred sections, Birmingham Wagon were prominent with a strong rally from 20s. 7½d. to 30s. which at one time touched off vague take-over talk. N.B. Locomotive were 8s. 1½d. and G.D. Peters, remained steady at 20s. on further consideration of the results. Moreover, Wagon Repairs 5s. shares have been maintained at 19s. and Gloucester Wagon 10s. shares strengthened to 10s. 9d. Beyer Peacock 5s. shares remained around 7s. 1½d. and Charles Roberts 5s. shares were 8s. 1½d.

Pressed Steel 5s. shares have been good at 33s., but Dowty Group 10s. shares eased slightly to 37s. 9d. after an earlier rise, though elsewhere, Leyland Motors remained an active feature, and at 89s. 6d. held most of an advance. Crofts Engineers 5s. shares have been firm up to 23s. following the raising of the dividend from 16 per cent to 17 per cent; although net profits have moved slightly lower, the higher dividend is covered about 2½ times.

Clarke Chapman remained under the influence of the results and moved up further to 50s. 6d., but there was profit-taking in Babcock & Wilcox, which came back to 34s. 9d.

In electricals, A.E.I. eased to 44s. 6d., and G.E.C. lost further ground at 35s. 3d. after their recent advance, while English Electric were also lower on balance at 37s. 9d., because of the cautious remarks at the annual meeting. Crompton Parkinson 5s. shares at 13s. 6d. also reflected the easier trend in stock markets, as did Mather & Platt at 45s. 3d. In machine tools, however, moderate gains have been recorded with Alfred Herbert 69s. 6d. and Craven Bros. 5s. shares 11s. 9d. Broom & Wade 5s. shares were 26s. 9d. but Tube Investments, like many other active shares which move closely with the day-to-day trend of stock markets, came back sharply to 82s. 3d., though elsewhere, T. W. Ward moved higher at 77s. 6d. and Stone-Platt at 66s. 9d. held most of an earlier rise. B. I. C. Cables were 57s. 6d. and Johnson & Phillips 22s. Steel shares also eased, being unaffected by the possibility of higher steel prices later in the year.

## Forthcoming Meetings

April 5 (Wed.). The Institution of Railway Signal Engineers, London Section, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 6 p.m. Annual general meeting.

April 5 (Wed.). The Electric Railway Society, at the Fred Tallant Hall, 153, Drummond Street, N.W.1, at 7 p.m. "Netherlands Railways," Mr. J. A. Rosser.

April 6 (Thu.). The Institution of Electrical Engineers, at Savoy Place, W.C.2, at 5.30 p.m. "Technical and economic aspects of the supply of reactive power in England and Wales," Mr. W. Casson, and Mr. H. J. Sheppard.

April 6 (Thu.). The Railway Development Association, at the Caxton Hall, Westminster, at 7.15 p.m. "The case for Railways," discussion. Mr. R. Aickman in the Chair.

April 7 (Fri.). The Railway Club, 7 p.m. at The Royal Scottish Corporation, Fetter

Lane, E.C.4. "Signalman's society," Mr. P. Broadley.

April 8 (Sat.). The Stephenson Locomotive Society, at 32 Russell Road, Kensington, W.14, at 2.30 p.m. Annual general meeting.

April 8-10 (Sat.-Mon.). Railway Students' Association. Week-end visit to South Wales.

April 9 (Sun.). Railway Correspondence & Travel Society visit to Swindon Works. Special train leaves Paddington at 9.15 a.m.

April 10 (Mon.). The Historical Model Railway Society, at Keen House, Calshot Street, N.1, at 7 p.m. "Transport Treasures," Mr. J. H. Scholes.

April 11 (Tue.). Institution of Railway Signal Engineers, at Savoy Place, W.C.2, at 6 p.m. Annual general meeting. Chairman's address.

April 11 (Tue.). The Institution of Civil Engineers, at Great George Street, Westminster, S.W.1, at 5.30 p.m. "Recent works on the canal system of the B.T.C. and planning for the future," Mr. V. H. Tripp.

April 13 (Thu.). Diesel Engineers & Users Association, at the Connaught Rooms, London. Annual luncheon.

April 15 (Sat.). The Stephenson Locomotive Society, North Stafford & Cromford & High Peak rail tour.

April 15 (Sat.). Tallylyn Railway Preservation Society, North-West Area. Annual reunion at the Memorial Hall, Albert Square, Manchester, at 2 p.m.

April 15 (Sat.). The Historical Model Railway Society, at 2 p.m. Visit to B.T.C. Museum at Clapham.

April 15 (Sat.). The Railway & Canal Historical Society, North-eastern and North-western groups joint visit to Stand-edge tunnel.

April 18 (Tue.). The Institution of Locomotive Engineers, at 28 Victoria Street, S.W.1, at 5.30 p.m. Annual general Meeting followed by an ordinary general meeting, at which a paper will be presented entitled "Work study and its application to motive power activities." Mr. G. O. B. Clarke, and Mr. W. G. F. Thorley.

April 22 (Sat.). The Stephenson Locomotive Society, High Peak rail tour.

April 24 (Mon.). The Institution of Railway Signal Engineers, at Savoy Place, W.C.2, at 6 p.m. Annual general meeting.

April 29 (Sat.). Railway Correspondence & Travel Society, East Midlands Branch, Vale of Belvoir tour. Special train leaves Nottingham Midland at 1.40 p.m.

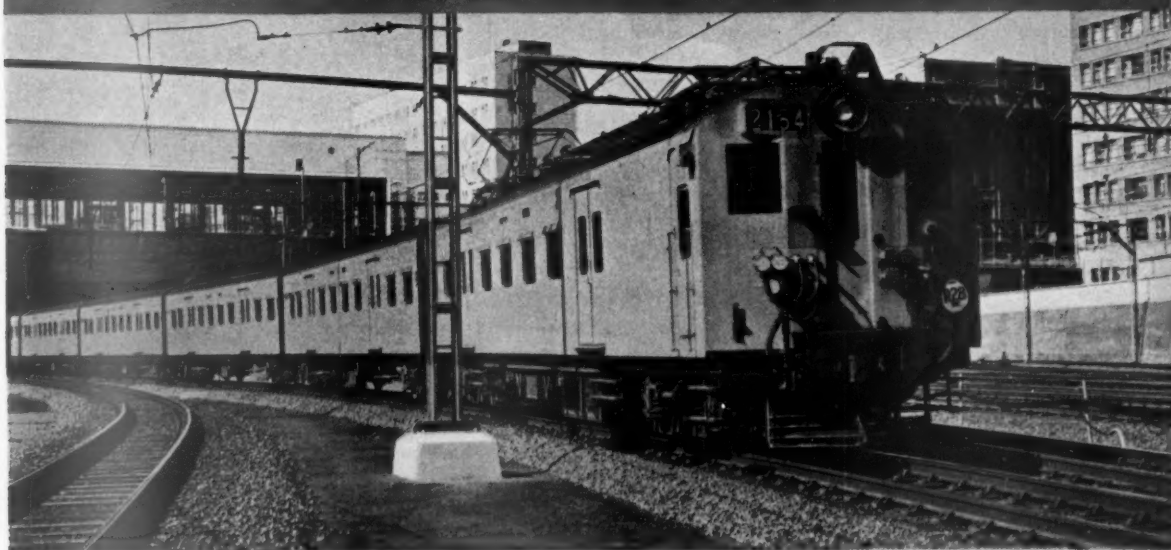
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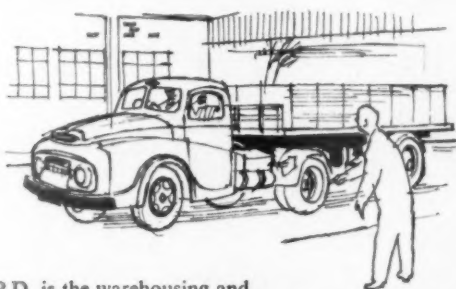
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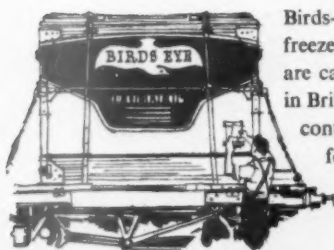
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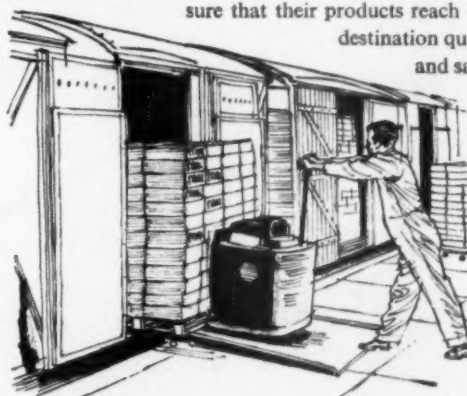
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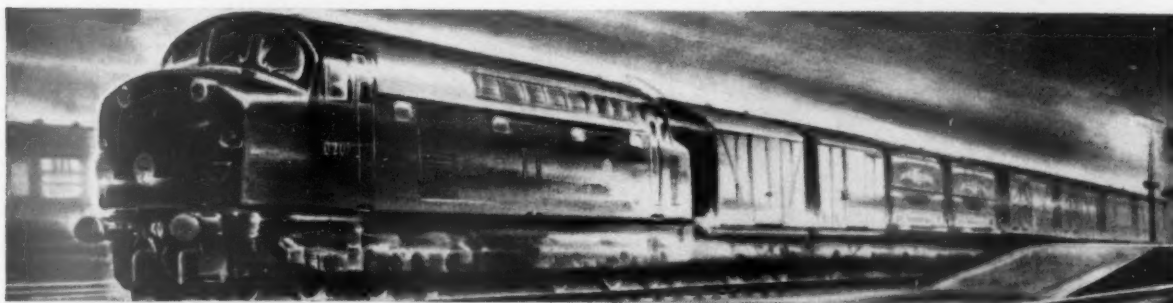
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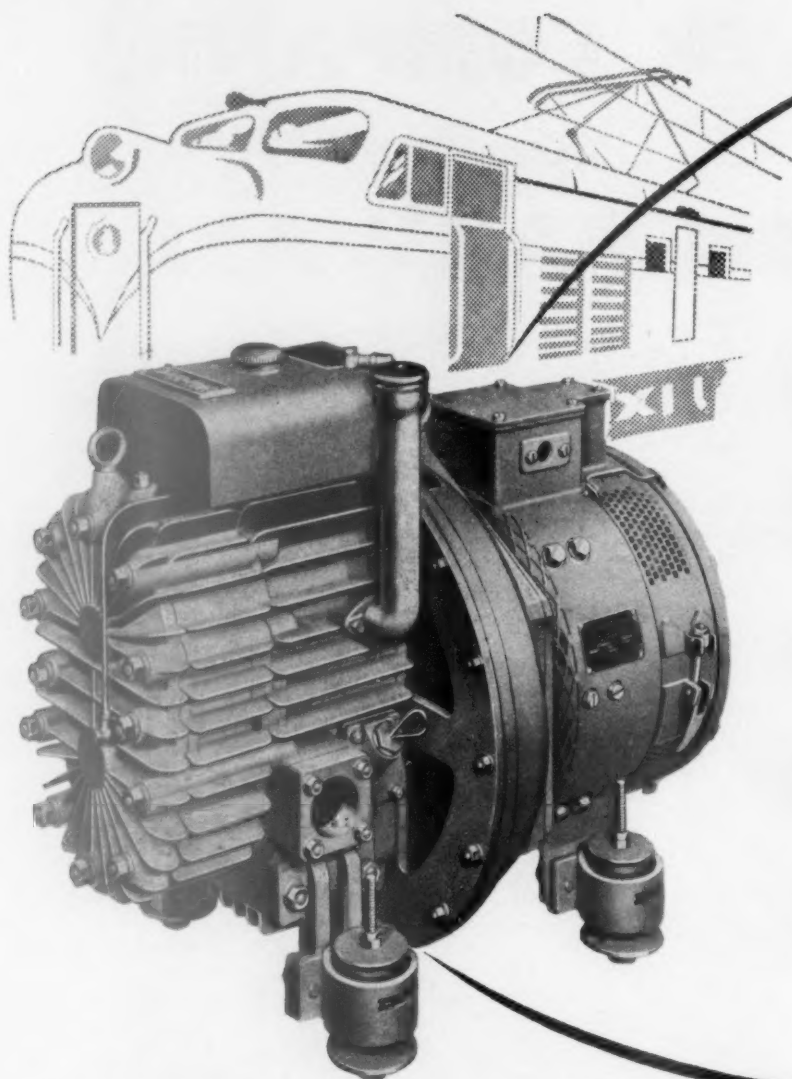
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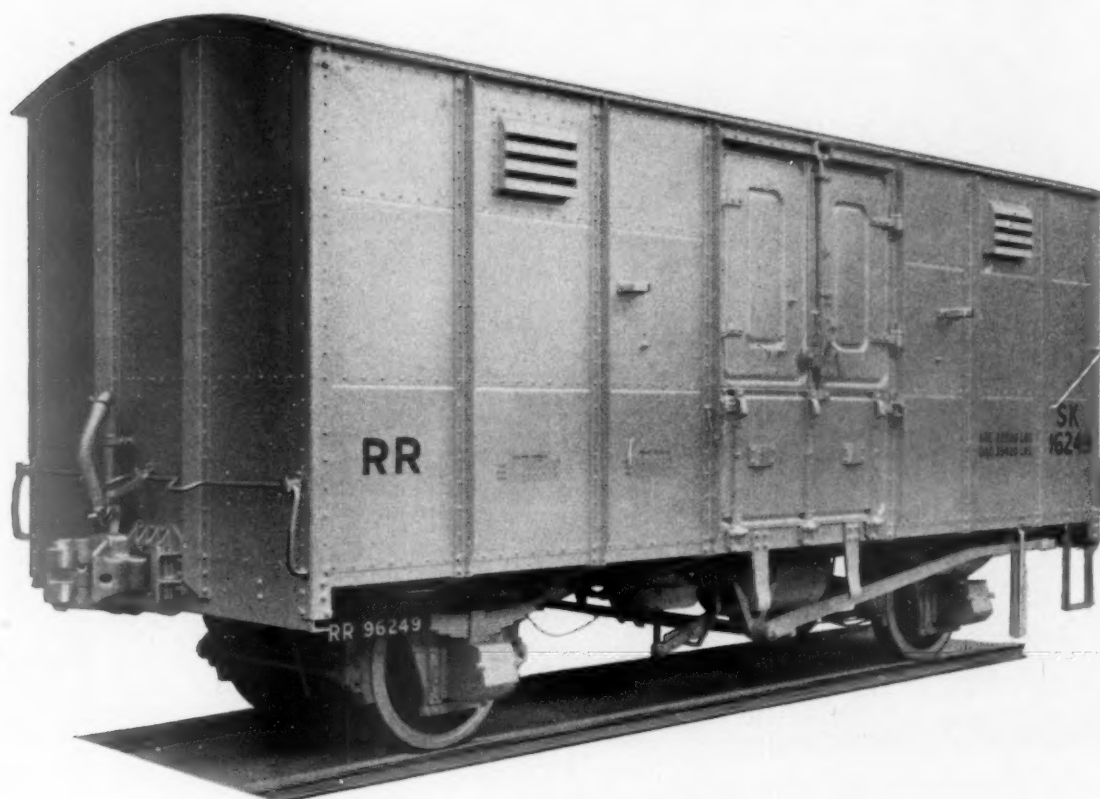
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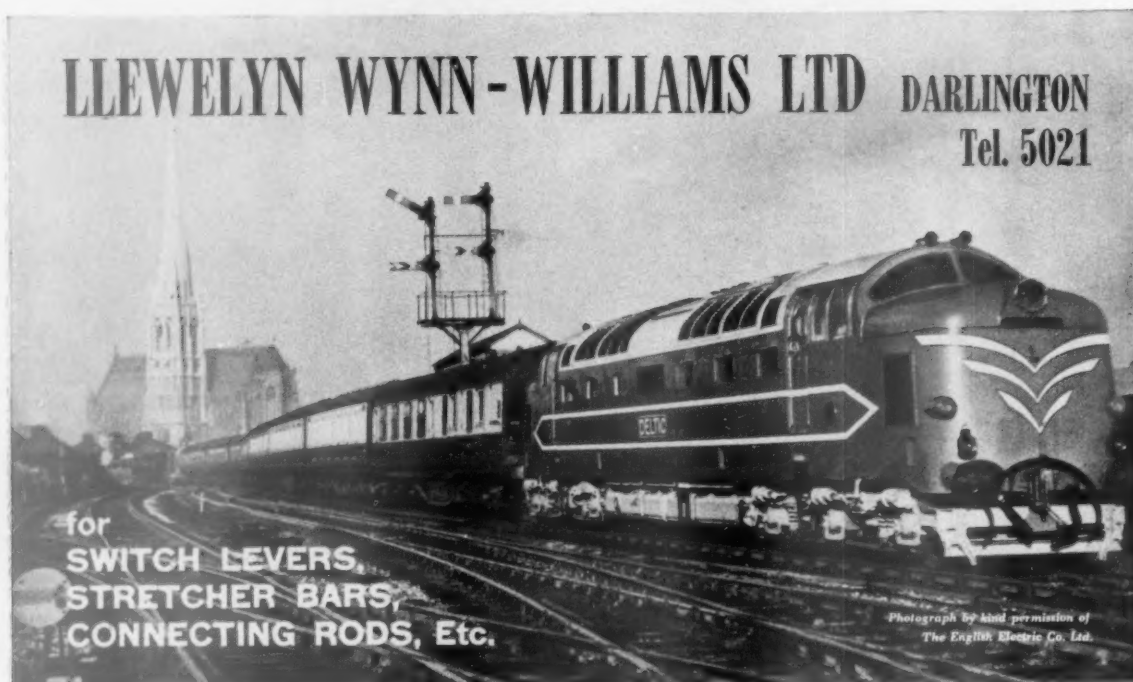
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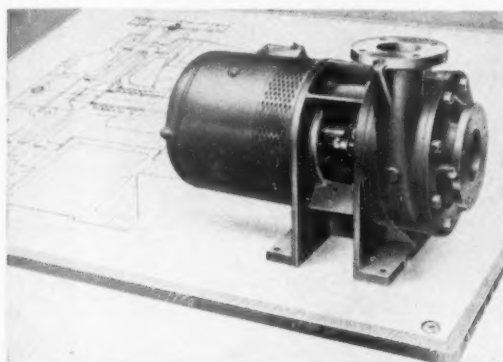
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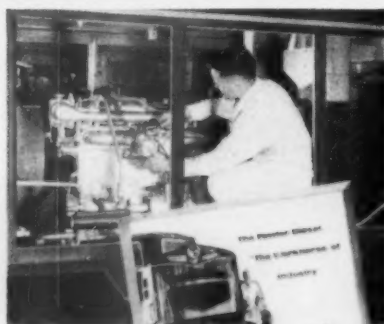
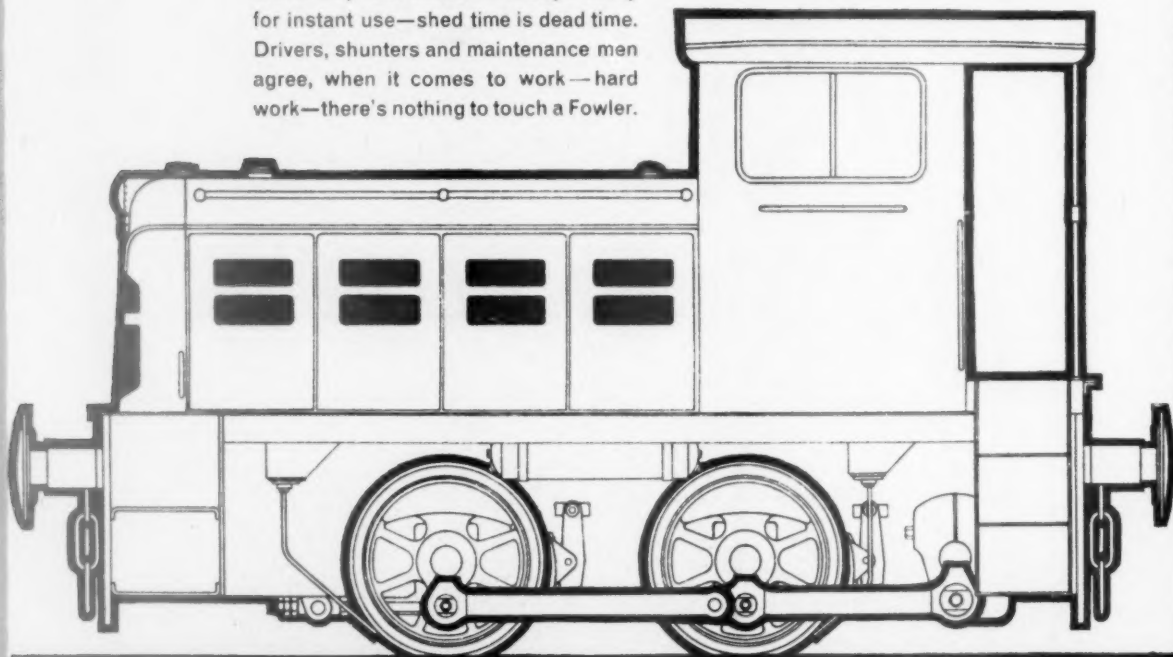
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